

# The Flora and Vegetation of Shropshire

**Alex Lockton and Sarah Whild**





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## Preface

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A county Flora is in essence a list of all the species known to occur in that county, together with some indication of their distribution and abundance. This current volume is the fifth that has been produced for Shropshire, updating the recent Ecological Flora of 1985. The previous Floras each covered a slightly different area, but this one conforms to the Watsonian vice-county of Salop and omits any historical records from outside that boundary.

As far as possible, all localities given have been defined to at least 1 km square resolution, including a re-working of many older records from original details. Although the maps therefore contain more gaps than tetrad maps would have done, the extra detail seems to us to be well worth the effort. Tetrad maps show the range of the species, whereas monads often display more interesting distribution patterns.

We have provided a list of all the National Vegetation Classification communities known to occur in the county, and many of the accounts are devoted to lists of communities in which each species occurs. This is possibly the first county Flora to take such an approach, and we hope it will be useful to surveyors in identifying vegetation types correctly and enabling conservationists to target and monitor their activities effectively. We have also attempted to demonstrate good recording practice by saying precisely where, when and by whom each stand of vegetation was recorded, (except where records are by the authors and made in the last twenty years – these records have no name or date). However, the responsibility for the analysis is entirely ours and we have often reinterpreted previous surveys using the raw data.

Another notable advance for this Flora, made possible by the computerisation of the records, is the freedom with which the underlying data has been made available. All 500,000 records included herein, plus many we have received subsequently, are freely available to everyone via the National Biodiversity Network, the Shropshire Ecological Data Network, and from the authors, for reanalysis and incorporation into future works. We request that anyone using the data should respect the intellectual rights of the recorders by acknowledging them appropriately and the property rights of landowners by not trespassing on private sites.

What we have not included in this Flora are introductory chapters on geology, soils and climate – this was done comprehensively in Sinker's Flora and repeating it would be unnecessary.

This publication begins to meet two of the wishes expressed by the late Charles Sinker in the introduction to his Flora of 1985, to incorporate the bryophytes and to add vegetation communities to the accounts. These two tasks are only just started, however, and should productively occupy the attention of botanists for many years to come. We are grateful to all the recorders, landowners and sponsors who have enabled this work to be produced, and hope that this publication is some justification of their contributions.

*Alex Lockton and Sarah Whild*







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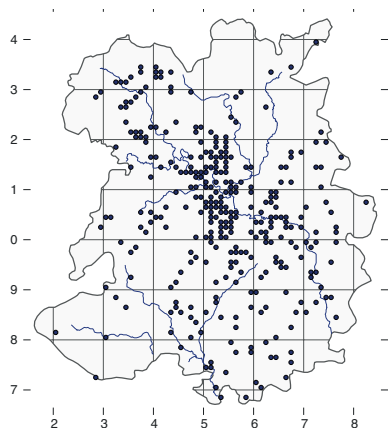




# INTRODUCTION

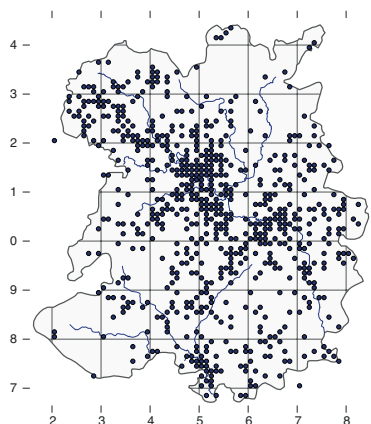
## Botanical recording in Shropshire can be conveniently divided into five time periods, defined by the four previous county Floras and then this one.

The first period ended with Edward Williams's Flora, an unpublished manuscript that has survived to the present day only in the form of a copy made by William Leighton in 1841, which is now in the Shropshire Archive in Shrewsbury. Williams's Flora was written in the early years of the 19<sup>th</sup> century and is largely based on his own records made between 1790 and 1800, with a few more recent ones and one known record as late as 1832. Most of his records are undated, and here have been given the arbitrary year of 1800. His Flora probably incorporates some finds by other people but, as they are not named, the records are here all assigned to Williams himself. In total there are 1,538 records of 841 species, from widely distributed localities throughout the county. There are also some 500 other early (before 1832) records known for the county, many of them by Littleton Brown, Arthur Aikin and Joseph Babington. A full history of this period is given by Hamilton (1909) and Oswald (in Sinker 1985).



Distribution of plants recorded in Williams's Flora (1800)

In the 1830s botany took a big step forward with William Leighton exploring the county in preparation of his own Flora of 1841. He was assisted in this by Charles Babington and a host of correspondents, some of whom, such as Mary McGhie and John Bowman, should probably be assigned to the earlier period, but we have few precise dates on which to pin their records. Leighton's (1841) Flora contains at least 4,578 records of 868 species, not including the ferns (which were only published much later). It includes some records from outside the county boundary (for example in the Wyre Forest) and even for detached portions of the county, such as Halesowen, but any that we can be confident were outside the vice county boundary have been ignored here.



Distribution of plants recorded in Leighton's Flora (1841)

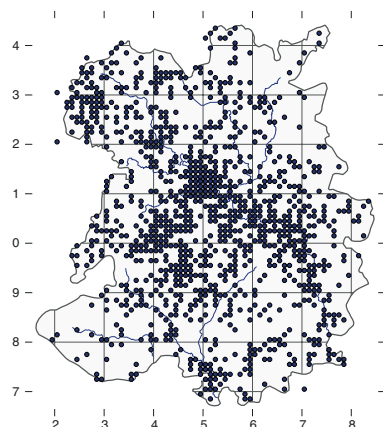
The third period ends with the compilation of William Hamilton and Richard Benson's Flora in the early years of the 20<sup>th</sup> century. Benson died in 1904 and Hamilton in 1910, so the date we have assigned it (and all undated records therein) is 1909, although their manuscript was later unhelpfully amended by J.C. Melvill. We have so far managed to extract some 4,639 records from the manuscript Flora, covering 557 species, but this work is not yet completed. Many of the records were also published in the long-running *Record of Bare Facts*, produced annually by the Caradoc & Severn Valley Field Club between 1891 and 1943.

For the period 1842-1909 we have 16,347 records of 1,545 taxa, which includes bryophytes and some introduced species not covered by previous works.

The scope of Hamilton's Flora was the county (as it was then) divided into twelve botanical divisions, based on the major river valleys. This was an early attempt to get a systematic recording unit smaller than the county. The botanical divisions are now difficult to use because they do not correspond to grid squares even at the 10 km scale, but fortunately most records were still given sites, which can be reasonably well localised.

The next major event in the county was the launch of Charles Sinker's Flora Project in the mid-1970s. The previous 50 years had been rather quiet in terms of publications, although a reasonable amount of background survey had been continuing. Of particular note was the work for Perring & Walters's *Atlas of the British Flora* in the 1950s, most of which was done at the 10 km scale and is regrettably of no use in a county Flora.

Sinker's Flora Group was an impressive organisation of about 30 active recorders, some of whom became hectad coordinators, which had the benefit of very



Distribution of plants recorded in Hamilton's Flora (1909)

thorough recording of some areas, but the disadvantage of producing some rather patchy distribution maps. Some 102,500 records of 1,500 species were collected during this period (1976-1984), all processed by hand.

The scope of Sinker's Flora was 'greater Shropshire' – a slightly enlarged version of the county created by squaring off the edges. This allowed the inclusion of some of the more interesting bits of neighbouring counties, especially Montgomeryshire, which was seen as an advantage because there seemed little likelihood at the time that there ever would be a Flora of that county. It also went some way toward complying with the suggestions of some prominent botanists of that time that recording should be done by 50 km grid square rather than by county. That suggestion was never adopted by anyone, and in fact since then there has been more of a drift toward using geographical areas rather than grid squares because it makes the data more easily understood.

In this analysis we have not included any records from 'greater Shropshire' that were definitely or probably from outside the vice county boundary. Grid squares with only a small portion in the county tended to be surveyed by the neighbouring county recorders, who naturally focused their attention on their side of the border, meaning that the marginal squares in Shropshire are sometimes completely unrecorded.

Some of Sinker's recorders deserve particular mention, as there is little said about them in the Flora. Chief among them was Doris Pugh (1910-1985), who made at least 8,000 records, mostly in the north-west of the county. She was much admired for her knowledge and patience as a teacher.

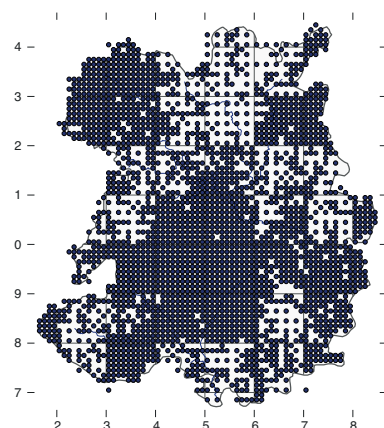
Joyce Warren (d. 1993) was a hectad coordinator who recorded mainly in four hectads in the south-west. Other top recorders from this period include Helen Davidson (Church Stretton area), Bryan Fowler (vicinity of Wolverhampton), Mary Fuller (Corvedale), Kathleen Saville (SO59), Audrey Ashwell (south Shropshire) and Bill Thompson (Bridgnorth area).

The system used for Sinker's Flora was to divide species into three categories. The commoner 'A' species were recorded only at 10 km scale, and those records have not been used here. 'B' species were recorded by monad and then compiled by hand into tetrad (2 km square) maps. Wherever possible we have used the original 1 km field cards, but not all of these have survived. The rarer 'C' species were all given 6-figure grid references and those have been computerised in full.

During the 1970s and 80s the first phytosociological data was being collected. Early recorders included Robert Cameron at the University of Birmingham and John Packham at Wolverhampton, who both made studies of woodlands. A team led by Martin Wigginton undertook an extensive survey of the Meres and Mosses in 1979, which included their own classification of the plant communities found. We have used their quadrat data here but reanalysed it to conform to the NVC. The main surveyor was Chris Walker, but the survey data is all anonymous and has been attributed to Wigginton here for the sake of convenience.

The other major survey was by Ian Trueman and colleagues, conducting the phytosociological study given in Sinker's Flora. Again they produced their own classification, because this was before the NVC, and again we have reanalysed it. Their survey covers a wide range of habitats, including waste ground and arable as well as all the semi-natural ones

We have so far managed to make only partial use of the data that was collected for the NVC project itself, but a few quadrats by recorders such as Bryan Wheeler have been extracted and are used here.



Monad distribution of records in Sinker's Flora (tetrad records are mapped in their SW monad).

The current survey began immediately after Sinker's Flora was published in 1985. Initially there was a resurvey of rare plants and then, in the early 1990s, an attempt was made to produce comprehensive tetrad maps of all species.



## Introduction

It soon became apparent that tetrad recording was obsolete, so most of the work for the current project has been undertaken at 1 km scale or finer. We normally use 8-figure grid references (10 m resolution) for recording quadrats or axiophytes.

A total of 350,000 records of 2,178 species were collected for the current project. Dozens of recorders have contributed directly, and we have done our best to extract records from reports and publications by others. All records are for vice county 40, and we have included any areas in modern Shropshire which are not in v.c. 40.

Kate Thorne has been one of the most productive recorders, mainly around the Long Mynd, and she has also undertaken a vegetation survey for us on Titterstone Clee.

Daniel Wrench worked for Chris Walker at English Nature, recording the vegetation communities of neutral grasslands over several years in the early 1990s. The team of surveyors included Steve Ayliffe and Jenny Duckworth, but for the sake of efficiency Dan is always listed as the recorder. He has subsequently worked as a consultant and more recently as County Ecologist.

John Clayfield has made an exceptional contribution to the study of the Clun Forest and the hills of the SW. He has a keen eye for sedges and ferns, and has undertaken a few contract surveys for us in his part of the county.

Jane Ing has been a stalwart of the Wildlife Trust's survey group, surveying Wildlife Sites with a group of helpers, mainly in the vicinity of Shrewsbury. Sylvia Kingsbury, Ruth Dawes, Pat Parker and John Bingham have been amongst the most productive recorders in the SW, NW, N and SE regions respectively. Rob Stokes has been outstanding in his ability to spot rare and unusual plants on his travels throughout.

The authors' own records come from a variety of surveys. We have undertaken numerous vegetation surveys (most notably of many of the Meres & Mosses under contract to Chris Walker at English Nature), led many Botanical Society field meetings, taught many courses and spent many hours searching out rare plants or exploring under-recorded areas.

Many other recorders have contributed records; a complete list is given at the end of the species accounts.

Other records have been obtained from surveys undertaken by other organisations, including Natural England, Shropshire Council, the former District and Borough Councils, the Field Studies Council, Shropshire Wildlife Trust, the Environment Agency, British Waterways, the Woodland Trust, English Heritage, the National Trust, the Botanical Society of Britain & Ireland, the Centre for Ecology and Hydrology, the Department for Environment, Food

and Rural Affairs, the British Bryological Society, the Border Bryologists and many commercial consultancies.

In recent years we have been particularly fortunate for the creation of SEDN – the Shropshire Ecological Data Network – which is run by Shropshire Council in cooperation with all the naturalists in the county. The arrangement is simple: taxpayers' money from various government agencies is distributed to naturalists in return for their data, which consists of biological records. This network has funnelled tens of thousands of pounds into the voluntary sector, helping us enormously to collect and compile useful information. For example, we have been able to hire contractors to survey under-recorded parts of the county and to photograph herbarium collections.

Herbaria are fruitful source of records, usually via the website Herbaria at Home, which is run by Tom Humphrey, and with the help of the following people to access the specimens: Andrew Agnew, Andrew Allott, Chris Boon, Peter Boyd, John Burnett, Mark Duffell, John Edmondson, Martin Godfrey, Genevieve Madgwick, John Mallabar, Roger Maskew, Dick Middleton, Ian Owens, Sarah Phillips, Tim Rich, Mark Spencer, Clive Stace, Jill Wilson and Leander Wolstenholme.

A total of 6,742 records given here are backed up by herbarium sheets, from the collections listed below.

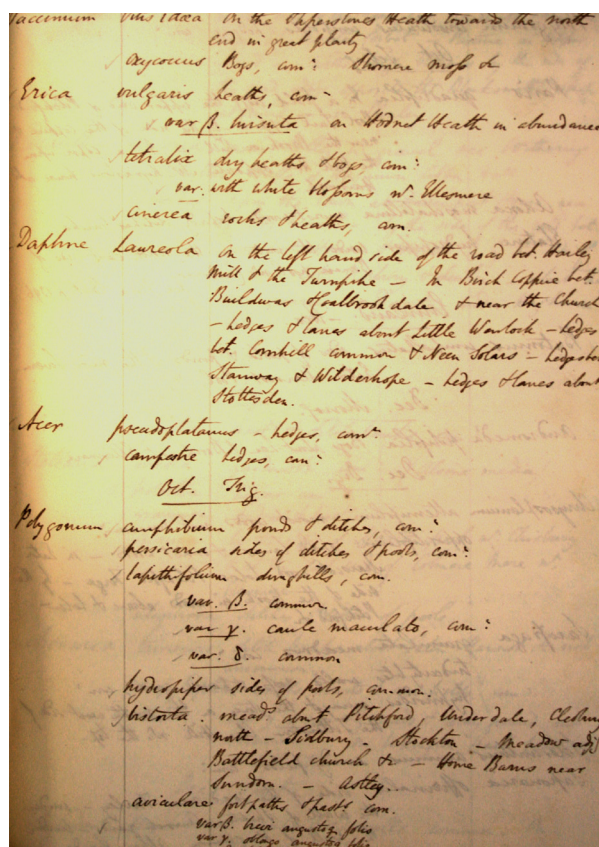


Distribution of records collected for the current project

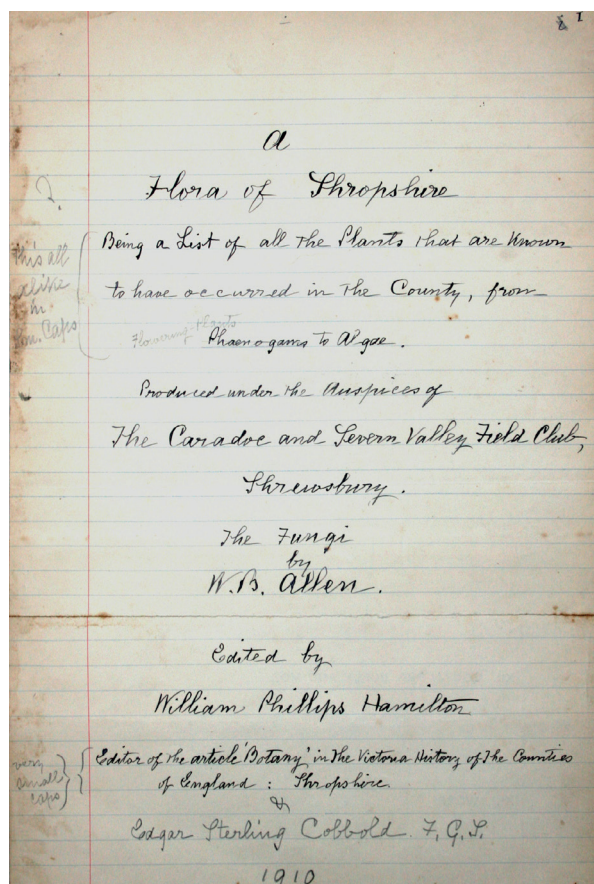
## Herbaria listed in the database

(Listing the standard herbarium code, the location, the number of records and the date range).

ABD (Aberdeen) 1, 1882  
 ABRN (Monks Wood ) 101, 1963  
 ABS (Aberystwyth ) 102, 1840-1984  
 B (Berlin) 1, 1904  
 BBSUK (Cardiff) 60, 1933-2007  
 BEL (Ulster Museum ) 2, 1864-5  
 BFT (Queens University, Belfast) 1, 1894  
 BIRM (Birmingham ) 1,614, 1831-2012  
 BM (London) 273, 1801-2010  
 BON (Bolton), 79, 1800-1975  
 CGE (Cambridge) 215, 1796-1991  
 CLE (Carlisle) 2, 1837  
 DBN (Dublin) 3, 1839-1892  
 DHM (Durham) 1, 1840  
 E (Edinburgh) 53, 1837-2006  
 GL (Glasgow) 2, 1885-1957  
 GLR (Gloucester) 9, 1907-1952  
 GOD (Charterhouse) 1, 1838  
 GW (Auchincruive) 1, 1956  
 HLU (Hull) 55, 1854-1953  
 HWB (Harrow) 9, 1903-1923  
 K (Kew) 37, 1830-2004  
 LDL (Ludlow) 3, 1839-1973  
 LDS (Leeds) 2, 1954  
 LINN (Linnean Society) 3, 1801-1802  
 LIV (Liverpool) 79, 1825-1975  
 LIVU (Liverpool University) 1, 1888  
 LSR (Leicester Museum) 3, 1979  
 LTN (Luton) 61, 1947-1985  
 LTR (Leicester University) 17, 1883-2003  
 MANCH (Manchester) 63, 1830-1961  
 MBH (Marlborough) 1, 1917  
 MHWK (Much Wenlock) 19, c. 1830s  
 NHM (Notts. University) 3, 1877-1909  
 NMW (Cardiff) 299, 1809-2013  
 NOT (Notts. Museum) 87, 1800-1931  
 OXF (Oxford) 44, 1724-1978  
 PTH (Perth) 11, 1836-1841  
 RAMM (Exeter) 1, 1832  
 RNG (Reading) 4, 1936  
 RTE (Reigate) 1, 1886  
 SDN (Swindon) 1, 1908  
 SHY (Shrewsbury) 2360, 1800-1980  
 SHYB (S'by School) 733, 1873-1907  
 SLBI (54) South London, 1832-1972  
 SPN (1) Southampton, 1840  
 STO (65) Stoke, 1892-1988  
 SUN (2) Sunderland, 1962  
 TCD (15) Trinity College, 1841-1894  
 UCNW (1) Bangor, 1901  
 WARMS (5) Warwick, 1830-1936  
 WOS (8) Worcester, 1849-1878  
 YRK (1) York, 1908



A page from Williams's Flora



Title page from Hamilton's Flora

## Compilation of the database

Our database has been compiled using Recorder 3 software, originally launched in the early 1990s and created by Stuart Ball. It has a particularly good data model that encourages the use of relational tables for structuring the data in a way that enhances analysis. For our purposes most records are organised into three categories: (1) full site (or grid square) lists; (2) vegetation quadrats; and (3) detailed individual records.

The sites we use are, as often as possible, based on common sense geographical or management units such as a hill, a lake or a meadow. So the site 'Cole Mere' includes the lake itself plus the surrounding land within the Country Park. The nearby canal, which is on a raised embankment and effectively isolated from the reserve, is 'Llangollen Canal at Cole Mere' and the nearby village and its surrounding farms are 'Colemere'.

Historical records are assigned to this site system as closely as possible and, as each site has a default 1 km square, that grid reference is assigned to the record unless there is further information such as a detailed description of the location. For rare plants additional dots are discouraged, so if there is a current known site it is assumed that the historical location was probably in the same place.

The site system allows comparison of surveys from year to year, or decade to decade, and the results can be very informative for management. This works best when comprehensive surveys are carried out periodically. In our experience a few surveys taking place over a

10-year period can produce a reasonably complete list for most sites.

For areas with no obvious site boundary, locations are usually given as the nearest town or the parish. In these instances, the 1 km square is the best unit to use when comparing lists, but there are few instances where we have sufficiently comprehensive data to allow this. Tetrads are more crude but can be an acceptable compromise.

Quadrats are collected following the guidelines given by Rodwell (1990-2000), which can be briefly summarised as recording all the species in a square measuring between 2 m × 2 m for short grassland to 4 m × 4 m in swamp or heath, and up to 50 m × 50 m in woodland canopies. Abundance is estimated using typically the Domin scale, from 1 (rare) to 10 (abundant), or sometimes percentages (usually in 5% intervals).

Detailed individual records are usually reserved for rare or critical plants and first county records. Each record will have a precise grid reference (usually accurate to 10 m), both a recorder and a determiner, and usually a herbarium code and a detailed comment about the plant or the record.

Plants are recorded at species level whenever possible. Subspecies are only used if they are consistently recorded; otherwise they are relegated to a comment. Aggregates are similarly avoided if at all possible, usually by omitting them altogether (orchid sp., sedge sp.) or assigning them to the most likely and often previously recorded species in that site (*Festuca* sp. would usually become *F. rubra* in a lowland meadow).

The following experts have kindly provided determinations of specimens referred to in this book (the number of specimens is given in brackets):

Acock, Mr P.J. (2)	Dines, Dr T.D. (1)	McKean, Mr D.R. (2)	Roberts, Mr F.J. (1)
Akeroyd, Dr J.R. (6)	Earl, Mr D.P. (2)	Meikle, Mr R.D. (63)	Roberts, Mr R.H. (3)
Allen, Dr D.E. (3)	Fryer, Mrs J. (5)	Murphy, Miss R.J. (6)	Robson, Dr N.K.B. (2)
Ashton, Dr P.A. (1)	Godfrey, Sqn Ldr M.F. (35)	Newton, Dr M.E. (8)	Rothero, Mr G.P. (17)
Bateman, Prof R.M. (8)	Groom, Dr Q.J. (4)	O'Reilly, Mrs C. (2)	Rumsey, Dr F.J. (24)
Blackstock, Mr N. (1)	Hale, Mr A.D. (1)	Page, Dr C.N. (1)	Ryves, Mr T.B. (1)
Blackstock, Mr T.H. (10)	Harley, Dr R.M. (46)	Pankhurst, Dr R. (1)	Sell, Mr P.D. (121)
Blockeel, Dr T.L. (23)	Harold, Dr B. (4)	Paton, Mrs J.A. (5)	Shoubridge, Mr R.F. (5)
Bosanquet, Mr S.D.S. (9)	Hawkes, Prof J.G. (1)	Paul, Miss A.M. (1)	Silverside, Dr A.J. (18)
Bryant, Mrs J.A. (11)	Hill, Dr M.O. (19)	Pearman, Mr D.A. (7)	Simpson, Dr D.A. (1)
Burnett, Prof Sir J.H. (1)	Hodgetts, Mr N.G. (61)	Perring, Dr F.H. (69)	Sleath, Dr J.D. (1)
Burton, Mr R.M. (2)	Holmes, Mr N.T.H. (6)	Pigott, Mr A.C. (3)	Smith, Dr A.J.E. (50)
Camus, Miss J.M. (1)	Holyoak, Dr D.T. (10)	Poland, Mr J. (2)	Spalton, Mr L.M. (11)
Cavalot, Mr K.V. (2)	Jermy, Mr A.C. (28)	Porter, Mr M.S. (12)	Spencer, Dr M.A. (1)
Chamberlain, Dr D.F. (4)	Jonsell, Dr B.E. (2)	Preston, Dr C.D. (70)	Stace, Prof C.A. (15)
Chater, Mr A.O. (46)	Kitchener, Mr G.D. (5)	Prestwood, Mr W.V. (1)	Stewart, Mr N.F. (56)
Clement, Mr E.J. (13)	Lansdown, Mr R.V. (4)	Primavesi, Rev A.L. (157)	Swan, Prof G.A. (1)
Cook, Dr C.D.K. (2)	Lawley, Mr M. (19)	Rackham, Dr O. (1)	Swindells, Mr R.J. (1)
Cope, Dr T.A. (17)	Leslie, Dr A.C. (1)	Randall, Mr R.D. (13)	Trueman, Prof I.C. (80)
Copping, Mr A. (5)	Maskew, Mr R. (7)	Reid, Mr A.W. (4)	Walker, Dr K.J. (1)
Crook, Mr C.S. (2)	Mason, Dr J.L. (1)	Rich, Dr T.C.G. (86)	Welch, Dr D. (3)
Denholm, Dr I. (2)	McCosh, Mr D.J. (84)	Richards, Dr A.J. (44)	Wolstenholme, Dr L.J. (2)



## Shropshire axiophytes

<i>Chara hispida</i>	<i>Campanula latifolia</i>	<i>Daphne laureola</i>	<i>Hordelymus europaeus</i>	<i>Ophrys apifera</i>	<i>Schoenoplectus lacustris</i>
<i>Trichocolea tomentella</i>	<i>C. trachelium</i>	<i>Deschampsia flexuosa</i>	<i>Hordeum secalinum</i>	<i>Orchis mascula</i>	<i>S. tabernaemontani</i>
<i>Bazzania trilobata</i>	<i>Cardamine amara</i>	<i>Dianthus deltoides</i>	<i>Hottonia palustris</i>	<i>Oreopteris limbosperma</i>	<i>Scirpus sylvaticus</i>
<i>Odontoschisma sphagni</i>	<i>C. impatiens</i>	<i>Dipsacus pilosus</i>	<i>Huperzia selago</i>	<i>Origanum vulgare</i>	<i>Scleranthus annuus</i>
<i>Aneura pinguis</i>	<i>Carex acuta</i>	<i>Drosera anglica</i>	<i>Hyacinthoides</i>	<i>Ornithopus perpusillus</i>	<i>Scrophularia umbrosa</i>
<i>Riccia fluitans</i>	<i>C. binervis</i>	<i>D. intermedia</i>	non-scripta	<i>Orobanche</i>	<i>Scutellaria galericulata</i>
<i>Sphagnum</i> – all species	<i>C. canescens</i>	<i>D. rotundifolia</i>	<i>Hydrocharis</i>	rapum-genistae	<i>S. minor</i>
<i>Andreaea rothii</i>	<i>C. caryophylla</i>	<i>D. dryopteris affinis</i>	morsus-ranae	<i>Osmunda regalis</i>	<i>Sedum forsterianum</i>
<i>Polytrichum strictum</i>	<i>C. demissa</i>	<i>D. cambrensis</i>	<i>Hydrocotyle vulgaris</i>	<i>Oxalis acetosella</i>	<i>S. telephium</i>
<i>Dicranum majus</i>	<i>C. digitata</i>	<i>D. carthusiana</i>	<i>Hymenophyllum wilsonii</i>	<i>Paris quadrifolia</i>	<i>Senecio erucifolius</i>
<i>Leucobryum glaucum</i>	<i>C. dioica</i>	<i>D. oreades</i>	<i>Hypericum elodes</i>	<i>Parnassia palustris</i>	<i>Serratula tinctoria</i>
<i>Leucobryum</i>	<i>C. disticha</i>	<i>Echium vulgare</i>	<i>H. humifusum</i>	<i>Pedicularis palustris</i>	<i>Sherardia arvensis</i>
juniperoideum	<i>C. echinata</i>	<i>Elatine hexandra</i>	<i>H. montanum</i>	<i>P. sylvatica</i>	<i>Silaum silaus</i>
<i>Grimmia montana</i>	<i>C. elata</i>	<i>Eleocharis acicularis</i>	<i>H. pulchrum</i>	<i>Persicaria minor</i>	<i>Solidago virgaurea</i>
<i>Rhodobryum roseum</i>	<i>C. elongata</i>	<i>E. multicaulis</i>	<i>Hypochaeris glabra</i>	<i>Phegopteris connectilis</i>	<i>Sorbus anglica</i>
<i>Aulacomnium palustre</i>	<i>C. hostiana</i>	<i>E. quinqueflora</i>	<i>Hypopitys monotropa</i>	<i>Phragmites australis</i>	<i>S. cuneifolia</i>
<i>Climacium dendroides</i>	<i>C. laevigata</i>	<i>Eleogiton fluitans</i>	<i>Impatiens noli-tangere</i>	<i>Pimpinella saxifraga</i>	<i>S. torminalis</i>
<i>Hookeria lucens</i>	<i>C. lasiocarpa</i>	<i>Elymus caninus</i>	<i>Inula conyzae</i>	<i>Pinguicula vulgaris</i>	<i>Spergula arvensis</i>
<i>Rhytidiadelphus</i>	<i>C. lepidocarpa</i>	<i>Empetrum nigrum</i>	<i>Isolepis setacea</i>	<i>Plantago coronopus</i>	<i>Spergularia rubra</i>
triquetrus	<i>C. limosa</i>	<i>Epilobium brunnescens</i>	<i>Jasione montana</i>	<i>P. media</i>	<i>Spiranthes spiralis</i>
<i>Rhytidiadelphus loreus</i>	<i>C. montana</i>	<i>E. palustre</i>	<i>Juncus bulbosus</i>	<i>Platanthera bifolia</i>	<i>Spiridula polyrrhiza</i>
	<i>C. muricata</i> ssp. <i>muricata</i>	<i>Epipactis helleborine</i>	<i>J. foliosus</i>	<i>P. chlorantha</i>	<i>Stachys arvensis</i>
<i>Achillea ptarmica</i>	<i>C. muricata</i> ssp. <i>pairae</i>	<i>E. palustris</i>	<i>J. squarrosus</i>	<i>Poa compressa</i>	<i>S. palustris</i>
<i>Aconitum napellus</i>	<i>C. nigra</i>	<i>E. phyllanthus</i>	<i>J. subnodulosus</i>	<i>Polygala serpyllifolia</i>	<i>Stellaria neglecta</i>
<i>Adoxa moschatellina</i>	<i>C. oederi</i>	<i>E. purpurata</i>	<i>Kickxia elatine</i>	<i>Polypodium cambricum</i>	<i>S. pallida</i>
<i>Agrimonia procera</i>	<i>C. pallens</i>	<i>Equisetum fluviatile</i>	<i>Lamiastrum galeobdolon</i>	<i>Polystichum aculeatum</i>	<i>S. palustris</i>
<i>Agrostis canina</i>	<i>C. panicea</i>	<i>E. sylvaticum</i>	<i>Lamium hybridum</i>	<i>P. setiferum</i>	<i>Succisa pratensis</i>
<i>Aira caryophylla</i>	<i>C. paniculata</i>	<i>Erica cinerea</i>	<i>Lathraea squamaria</i>	<i>Potamogeton alpinus</i>	<i>Teesdalia nudicaulis</i>
<i>A. praecox</i>	<i>C. pilulifera</i>	<i>E. tetralix</i>	<i>Lathyrus linifolius</i>	<i>P. compressus</i>	<i>Thalictrum flavum</i>
<i>Alchemilla filicaulis</i>	<i>C. pseudocyperus</i>	<i>Erigeron acris</i>	<i>L. sylvestris</i>	<i>P. friesii</i>	<i>Thelypteris palustris</i>
<i>A. glabra</i>	<i>C. pulicaris</i>	<i>Eriophorum</i>	<i>Legousia hybrida</i>	<i>P. gramineus</i>	<i>Thymus pulegioides</i>
<i>A. xanthochlora</i>	<i>C. rostrata</i>	angustifolium	<i>Leontodon saxatilis</i>	<i>P. obtusifolius</i>	<i>Tilia cordata</i>
<i>Alisma lanceolatum</i>	<i>C. spicata</i>	<i>E. latifolium</i>	<i>Lepidium campestre</i>	<i>P. perfoliatum</i>	<i>T. platyphyllus</i>
<i>Allium oleraceum</i>	<i>C. strigosa</i>	<i>E. vaginatum</i>	<i>L. heterophyllum</i>	<i>P. polygonifolius</i>	<i>Torilis nodosa</i>
<i>A. ursinum</i>	<i>C. sylvatica</i>	<i>Erodium maritimum</i>	<i>Limosella aquatica</i>	<i>P. praelongus</i>	<i>Trichomanes speciosum</i>
<i>Alopecurus aequalis</i>	<i>C. vesicaria</i>	<i>Erophila majuscula</i>	<i>Linum catharticum</i>	<i>Potentilla argentea</i>	<i>Trichophorum</i>
<i>Anacamptis morio</i>	<i>C. x fulva</i>	<i>Euonymus europaeus</i>	<i>Lithospermum officinale</i>	<i>Poterium sanguisorba</i>	germanicum
<i>A. pyramidalis</i>	<i>Carlina vulgaris</i>	<i>Euphorbia amygdaloides</i>	<i>Littorella uniflora</i>	<i>Prunus padus</i>	<i>Trifolium campestre</i>
<i>Anagallis tenella</i>	<i>Catabrosa aquatica</i>	<i>Euphrasia arctica</i>	<i>Luronium natans</i>	<i>Pyrola minor</i>	<i>T. striatum</i>
<i>Anchusa arvensis</i>	<i>Catapodium rigidum</i>	<i>E. confusa</i>	<i>Luzula multiflora</i>	<i>Ranunculus arvensis</i>	<i>Triglochin palustris</i>
<i>Andromeda polifolia</i>	<i>Centaurea scabiosa</i>	<i>E. micrantha</i>	<i>L. pilosa</i>	<i>R. auricomus</i>	<i>Trisetum flavescens</i>
<i>Anemone nemorosa</i>	<i>Centunculus minimus</i>	<i>E. nemorosa</i>	<i>L. sylvatica</i>	<i>R. circinatus</i>	<i>Trollius europaeus</i>
<i>Anthemis cotula</i>	<i>Cerastium</i>	<i>E. officinalis</i>	<i>Lycopodium clavatum</i>	<i>R. fluitans</i>	<i>Typha angustifolia</i>
<i>Anthriscus caucalis</i>	semidecandrum	<i>Festuca altissima</i>	<i>Lysimachia vulgaris</i>	<i>R. lingua</i>	<i>Umbilicus rupestris</i>
<i>Anthyllis vulneraria</i>	<i>Ceratocarpus claviculata</i>	<i>Filago minima</i>	<i>Lythrum portula</i>	<i>R. omiophyllum</i>	<i>Utricularia minor</i>
<i>Aphanes australis</i>	<i>Chrysosplenium</i>	<i>F. vulgaris</i>	<i>Melampyrum pratense</i>	<i>R. peltatus</i>	<i>Vaccinium myrtillus</i>
<i>Apium inundatum</i>	alternifolium	<i>Filipendula vulgaris</i>	<i>Melica nutans</i>	<i>R. penicillatus</i>	<i>V. oxycoccus</i>
<i>Arabis hirsuta</i>	<i>Cicuta virosa</i>	<i>Frangula alnus</i>	<i>M. uniflora</i>	<i>R. trichophyllum</i>	<i>V. vitis-idaea</i>
<i>Astragalus glycyphyllos</i>	<i>Circaea x intermedia</i>	<i>Gagea lutea</i>	<i>Menyanthes trifoliata</i>	<i>Rhinanthus minor</i>	<i>Valeriana dioica</i>
<i>Astrantia major</i>	<i>Cirsium acaule</i>	<i>Galeopsis angustifolia</i>	<i>Milium effusum</i>	<i>Rhynchospora alba</i>	<i>Veronica</i>
<i>Avenula pubescens</i>	<i>Cirsium dissectum</i>	<i>G. speciosa</i>	<i>Moenchia erecta</i>	<i>Rosa micrantha</i>	anagallis-aquatica
<i>Baldellia ranunculoides</i>	<i>C. eriophorum</i>	<i>Galium odoratum</i>	<i>Molinia caerulea</i>	<i>R. spinosissima</i>	<i>V. catenata</i>
<i>Berula erecta</i>	<i>Cladium mariscus</i>	<i>G. uliginosum</i>	<i>Montia fontana</i>	<i>Rubus saxatilis</i>	<i>V. montana</i>
<i>Betonica officinalis</i>	<i>Clinopodium acinos</i>	<i>Genista anglica</i>	<i>Myosotis discolor</i>	<i>Rumex hydrolapathum</i>	<i>V. officinalis</i>
<i>Bidens cernua</i>	<i>C. ascendens</i>	<i>G. tinctoria</i>	<i>M. ramosissima</i>	<i>R. maritimus</i>	<i>V. scutellata</i>
<i>B. tripartita</i>	<i>C. vulgare</i>	<i>Gentiana pneumonanthe</i>	<i>M. secunda</i>	<i>Sagina nodosa</i>	<i>Vicia lathyroides</i>
<i>Blackstonia perfoliata</i>	<i>Coeloglossum viride</i>	<i>Gentianella amarella</i>	<i>Myosoton aquaticum</i>	<i>Sagittaria sagittifolia</i>	<i>V. sylvatica</i>
<i>Blechnum spicant</i>	<i>Colchicum autumnale</i>	<i>Geranium columbinum</i>	<i>Myrica gale</i>	<i>Salix aurita</i>	<i>Viola canina</i>
<i>Botrychium lunaria</i>	<i>Comarum palustre</i>	<i>G. sanguineum</i>	<i>Myriophyllum</i>	<i>S. cinerea</i> ssp. <i>cinerea</i>	<i>V. hirta</i>
<i>Briza media</i>	<i>Convallaria majalis</i>	<i>G. sylvaticum</i>	alterniflorum	<i>S. pentandra</i>	<i>V. lutea</i>
<i>Bromopsis benekeii</i>	<i>Crepis paludosa</i>	<i>Geum rivale</i>	<i>Nardus stricta</i>	<i>S. purpurea</i>	<i>V. palustris</i>
<i>B. erecta</i>	<i>Cryptogramma crispa</i>	<i>Glebionis segetum</i>	<i>Narthecium ossifragum</i>	<i>S. repens</i>	<i>V. reichenbachiana</i>
<i>B. ramosa</i>	<i>Cynoglossum officinale</i>	<i>Gnaphalium sylvaticum</i>	<i>Neottia nidus-avis</i>	<i>S. x multinervis</i>	<i>V. tricolor</i>
<i>Bromus racemosus</i>	<i>Cystopteris fragilis</i>	<i>Gymnadenia densiflora</i>	<i>N. ovata</i>	<i>Samolus valerandi</i>	<i>Wahlenbergia hederacea</i>
<i>Butomus umbellatus</i>	<i>Dactylorhiza incarnata</i>	<i>Gymnocarpium</i>	<i>Nuphar pumila</i>	<i>Sanguisorba officinalis</i>	<i>Zannichellia palustris</i>
<i>Calamagrostis canescens</i>	<i>D. maculata</i>	dryopteris	<i>Oenanthe aquatica</i>	<i>Sanicula europaea</i>	
<i>Callitriche</i>	<i>D. praetermissa</i>	<i>Helianthemum</i>	<i>O. fistulosa</i>	<i>Saxifraga granulata</i>	
hermaphroditica	<i>D. purpurella</i>	nummularium	<i>Ononis repens</i>	<i>S. tridactylites</i>	
<i>Calluna vulgaris</i>	<i>Danthonia decumbens</i>	<i>Helieborus foetidus</i>	<i>Ophioglossum vulgatum</i>	<i>Scabiosa columbaria</i>	

## Introduction

This system can create some inaccuracies: *Glyceria* sp. is usually assigned to *G. fluitans* and all scaly male ferns are *Dryopteris affinis* unless determined by an expert. There is a large historical legacy of inaccuracy in these areas and creating lots of unidentifiable aggregates only boosts the apparent number of taxa without adding much practical value to the dataset.

The database also collects biographical details of recorders, each of whom is identified uniquely. Although Recorder is unusual in allowing long lists of recorders, we limit the number to 3 for the sake of efficiency. So if a large number of people attend a field meeting, the recorders that will be listed are just three of the more proficient, usually starting with the county recorder.

In this Flora records are presented giving only the name of the first of the listed recorders, so it is quite possible that the person who actually spotted the plant in question is not necessarily given as the recorder. It is even possible that they may not even have their name linked to the record at all. This is of course a deficiency, but our main purpose has been to record the distribution of the plants rather than the activities of people, and the method we have used is designed to be efficient for both collecting and analysing the data. For any particularly important discovery, a detailed individual record will always give the precise attribution.

Another important aspect of the database is the allocation of dates to records. Most of the recent data has the full day/month/year format, but many older records are compilations over a number of years. Wherever possible we have avoided using such compilations, and if there is a correctly dated record (1992, for example) and an aggregated record (1987-1999 date class) then the compiled record is deleted. Otherwise, we have given the closest approximation to the correct date as possible, using the following guidelines.

Date of publication is used if no other information is available: 1841 for Leighton's Flora; 1909 for Hamilton's; 1984 for Sinker's. Williams's records are given a date of 1800, as an approximation of the end of his main period of activity. When a herbarium specimen or recording card is available, that date is used in preference to the publication date, so a record of Leighton's might have a collection date of 1836 and a publication date of 1841, but it will not be duplicated as two records. If a recorder died before the date of publication of their records, the date of their death will be used. Similarly, if someone is known to have left the county, or conducted a survey on a particular date, then that year is used for all relevant records. In summary, records are assigned to a date that is no later than possible and no earlier than can be reasonably claimed.

## Use of the data for conservation

Uses of biological records for the study and conservation of plants has developed slowly since early Floras in the 18<sup>th</sup> and 19<sup>th</sup> centuries. Distribution mapping is helpful in showing which species are common or rare, and repeated mapping shows which are spreading or reducing in range. This information is used in Red Data Books and conservation strategies such as Biodiversity Action Plans to focus resources on the species that are most vulnerable.

Coincidence mapping and site surveys are used for identifying areas of particular diversity or distinctive character, again in order to prioritise areas for conservation. This is reflected in the designation of Sites of Special Scientific Interest and nature reserves, for example in the Nature Conservation Review (Ratcliffe 1977). Repeated surveys can be used to study changes in sites or landscapes, although fully worked examples are not yet commonplace. Our Floras of Attingham Park (Whild & Lockton 2005) and Haughmond Hill (Whild, Lockton & Godfrey 2006) are examples of this process in action.

Vegetation surveys add to these functions by characterising communities, allowing a further level of categorisation. This has been extensively done for woodlands and mesotrophic grasslands by organisations such as Natural England, but other habitats such as swamps, fens and ruderal vegetation have been much less well studied. Only a small number of county Floras have so far included information on vegetation (Sinker *et al.* 1985 and Graham 1988 are the most notable), and the present work is intended to progress these studies. It offers a fairly comprehensive account of the National Vegetation Classification (NVC) communities to be found in the county, with a general assessment of their distribution and abundance.

The concept of axiophytes ('worthy plants') is a recent innovation, although the basis of it is implicit in much of the above. Whenever a species, site or vegetation community is selected for protection, there must be a reason for choosing that particular one above the alternatives. Rarity alone is a factor, but a plant can be rare and not special (an introduced casual, for instance). Threat is another one, as there is little point in protecting that which is not threatened; but a species could be declining due to factors that are not particularly relevant to conservation.

Quality is clearly also a factor, and almost all conservationists agree that good quality habitats such as species-rich meadows and ancient woodlands can be recognised even if they are sometimes difficult to quantify by something as simple as a species count. This is where axiophytes come in. An axiophyte is a plant that is typically only found in habitats that are worthy

of protection. Because disturbance and eutrophication are common and increasing in modern Britain, the axiophytes given here tend to be characteristic of stable communities and oligotrophic conditions. They are the plants of the habitats that we wish to conserve.

Most of the axiophytes chosen are vascular plants, which can be natives, archaeophytes or even occasionally neophytes. There is an additional constraint on the selection of bryophytes, in that they need to be fairly easily identified and recorded, because data deficiencies reduce the power of any analysis.

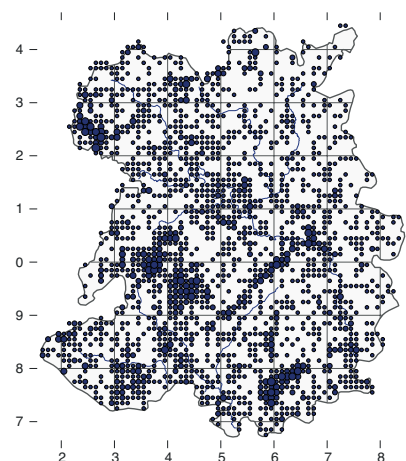
The precise list of axiophytes is subject to revision. However, as long as the list is reasonably sensible it is useful in categorising sites and monitoring change. Assuming the list is selected prior to the analysis, it allows comparison between sites in a way that is not possible if each site is looked at in isolation, as has been the custom in the past. Because the list is drawn up on the basis of current conservation priorities, one might not always agree with the resulting analysis, but at least it is there and if one chooses to deviate from it or ignore it, then that decision can be explained and understood.

The list of axiophytes used here on the previous page includes some 414 species, of which one is a charophyte, 39 are bryophytes and 376 are vascular plants. Different lists could be drawn up in future or for other purposes: our aim here is not to enforce a definitive list that would stand up to forensic investigation, but to provide a useful tool for conservation managers. Filtering long lists of plants to find just the ones that actually matter makes the task of interpretation much easier.

In an analysis of 41,000 records of axiophytes collected since 1985, the most valuable sites turn out to be, unsurprisingly, also the biggest. The Long Mynd ranks highest, with 149 species of axiophyte. This reflects its wide range of habitats, especially the *Sphagnum*-rich flushes with their rare plants. Our definition of the Long Mynd here is a topographical one rather than the area encompassed by the SSSI or the National Trust ownership: several of the best areas are outside either of these boundaries.

The Stiperstones (145 axiophytes), the Wyre Forest (141), Titterstone Clee (113) and Wenlock Edge (113) are the next best sites, and between them they constitute the main landscape areas in the county that are still largely undeveloped. The axiophyte list is helpful for enabling one to focus attention on these species, but it would take a detailed study to work out how they have changed over the years and how precisely to manage these areas for them.

If the Meres and Mosses were treated as a single site, their axiophyte count would be 201, outranking the other landscape areas. Treating them as separate



Coincidence map of axiophytes in Shropshire, with larger dots representing the greatest number of species (up to 95 in a 1 km square) using data from 1985 to 2013.

sites, however, reveals that Brown Moss is the most species-rich, with 70 axiophytes recorded since 1985. Unfortunately this site has been rather neglected, resulting in the loss of specialities such as *Sparganium natans*, *Baldellia ranunculoides* and *Luronium natans* (although the latter two reappeared temporarily when the seed bank was disturbed).

The next best mere is Cole Mere, with 60 axiophytes, including *Nuphar pumila* and *Carex elongata*, followed by Whixall Moss (51), Wem Moss (49), Fenemere (44) and Morton Pool (43).

Other sites that rank highly for their number of axiophytes include Haughmond Hill with 75, Benthall Edge (72), Moelydd (70), Craig Sychtyn (68), Earl's Hill (67) and Oreton (66). The sites on limestone clearly stand out, but as species-richness is a factor in conservation value, this is not unwarranted. Some very species-poor sites such as oligotrophic lakes and acid woodland rank quite poorly for vascular plant axiophytes, although they can have rare species. Newton Mere is a case in point, with just 7 axiophytes, but it is the best site in the county for *Elatine hexandra* and *Littorella uniflora*.

These analyses create plenty of uses for information on plants, but the next step will hopefully be to apply it to other taxonomic groups as well. There must be many animals, fungi and other organisms that are effectively confined to particular vegetation communities, or to particular plants which are themselves restricted in distribution. Only a small amount of work has been done on these associations so far, but such studies have the potential to transform nature conservation by allowing us to predict the responses of target species to indirect interventions such as habitat management. Such an understanding of ecosystems would be a great improvement on ex-situ conservation or direct methods such as species introductions.

### The species accounts

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The main section of the Flora lists all the vegetation communities and species of charophytes, bryophytes and vascular plants that have been recorded in the county. Occasionally errors in identification will have occurred, and we have attempted to minimise these by excluding any records that we feel have not been made with sufficient care to be taken seriously. In this regard, the ability and overall performance of the recorder is taken into account as well as the detail with which their records are presented. The best records, of course, are supported by voucher specimens, photographs, determiners' comments and/or repeat observations, but most records quite understandably do not have this level of detail. Nomenclature follows the British Bryological Society checklist and Stace (2010).

Our approach has been to quietly ignore unlikely and poorly presented records but, if the record is in the public domain and is likely to be thought of as an omission of ours, it is given in smaller text and square brackets. Some of them might eventually turn out to have been correct. Our rejection of them is based only on the evidence we currently have available.

Vegetation communities are more difficult to identify correctly, so we have ignored a higher proportion of the records. There are scientific techniques for collecting NVC data in such a way that it can be confirmed by anyone, and if that was done then we will have reanalysed the data to confirm the conclusions. Otherwise, no unsubstantiated claims of vegetation communities have been accepted.

Each species account gives a summary of the distribution, ecology and status of the species and, for most species but the rarest ones, a distribution map. The maps are produced at the monad (1 km) scale, with tetrad and hectad records plotted in the south west corner of their square (which occasionally produces a dot well outside the vice-county boundary). The dots are coloured to represent three date classes: dark blue for the current period (1985-2014), light blue for Sinker's Flora (1970-1984) and white for older records.

### Acknowledgements

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We have attempted to credit every significant recorder in the preceding introductory chapter, together with all referees and those who have helped with inputting of data over the years. For every record mentioned, the name of the recorder and the date is given. The only exception is for records made by one or both of the authors in the last 25 years, where the recorder and date are normally omitted. Authors of previous county Floras are cited by surname only; all others have their names given in full. A full list of everyone who has

submitted a record is included in the back of the book, together with the numbers of records against each recorder.

Dan Wrench, Chris Walker and Ian Trueman have provided comments on the NVC chapter and it would only be appropriate here to offer our apologies to John Rodwell for the liberties that we have taken with the NVC names – but the codes remain the same and hopefully our shortened, more pragmatic names for communities will make for easier reading.

We are enormously grateful to the Field Studies Council for providing us with meeting rooms at Preston Montford, and to the University of Birmingham and Manchester Metropolitan University for space, over the years, at The Gateway. We would not have been able to publish this Flora without the generous sponsorship from the Jean Jackson Charitable Trust, Shropshire Ecological Data Network, The Botanical Society of Britain and Ireland, The Shropshire Wildlife Trust and the Field Studies Council.

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All photographs in the book are taken by the authors unless it states otherwise, except for the chapter headings, where most photos are by Dan Wrench (apart from the Introduction chapter heading photo, by Mike Ashton). We have credited all other photographers but a special mention must be made of Martin Godfrey's excellent bryophyte photos. We have been immensely lucky to have such a patient design team – Mike Ashton of MA Creative Limited and Gordon Leel have designed and laid out this Flora and have put up with far too many last minute changes. Emma Hopkisson printed out copies for us to proof read at very short notice.

Ian Trueman rescued the Change chapter when deadlines were looming and, as a Flora writer extraordinaire, has provided so much advice and support throughout the project. Finally, a thank you to all botanists past and present who have recorded, inspired, roamed through almost a thousand tetrads, trained others and generally made vice-county 40 such a great place to botanise.





# CHANGES IN THE VASCULAR PLANT FLORA OF SHROPSHIRE

by Ian Trueman

**“These flower-lined lanes, with their sustained splendour from early spring to the end of autumn, are a priceless legacy in the border landscape. We must not lightly let them go.”**

**Charles Sinker, *Ecological Flora of the Shropshire Region*.**

Change in the flora of Shropshire between 1985 and 2013 appears inevitable to any armchair ecologist. It is easy to predict the loss of species characteristic of oligotrophic (nutrient-poor) habitats and a rise in competitive species as levels of nitrogen deposition and ground water enrichment continue to increase, but it is also likely, if not inevitable, that there are more subtle and perhaps not so predictable changes. The analysis presented in this chapter is quite technical so the ‘headline’ findings from our analysis of change are presented here.

These are:

- Wetland and open water habitats are the most threatened.
- There has been a fall in the number of tetrad records for native species which may represent a genuine change in the proportions of native to non-native taxa although native taxa still dominate.
- Archaeophyte diversity at the tetrad level is decreasing.
- Several new native species have been recorded. It seems reasonable to assume that most of these are examples of pre-existing populations which have been discovered, rather than plants entering Shropshire for the first time.
- Several native species thought to be extinct have been re-discovered.
- Many axiophytes appear to have undergone a dramatic decline with reductions of 50 to 100 tetrads.
- These axiophytes are typical of grassland and wetland and a range of other semi-natural habitats although woodland indicators seem more stable.
- However, increasing axiophytes are as diverse in habitat as decreasing axiophytes, with the same bias towards grassland and wetland habitats. The balance at both ends may be more to do with the species richness of the habitat than threats to specific habitats.
- Several common ‘wayside’ plants such as *Cruciata laevipes* and *Linaria vulgaris* appear to have lost more than 50% of their total tetrads.
- There appears to be increasing polarisation between the conservation-rich and conservation-poor areas of the vice-county and an overall weakening of the ecological network.

The two main data sets that have allowed an analysis of change are the records from Sinker *et al.* (1985) and from the intervening period to 2013. However, the whole analysis is from a combined database so the conclusions drawn cannot be considered to be entirely independent. The main comparisons and analyses consider the following:

- Species arrivals.
- Species departures/extinctions.
- Losses and gains of native species.
- Losses and gains of alien/introduced species.
- Changes in the distribution and density of axiophytes (indicator species).
- The botanical characterisation of the tetrads and changes in the distribution of some of the major types.

## Setting the scene

Philip Oswald in Chapter 2 of Sinker *et al.* (1985) documented the first botanical records, starting with John Leland (1506-1552) who recorded “in morisch and mossy ground...lying in the ground...fyr-woodde rootes”. These were *Pinus sylvestris* stumps which have been dated at Whixall Moss (Chambers *et al.* 1996) as 3,200-2,900 years old and are presumably the relics of former pine forest displaced as the climate improved. *Pinus sylvestris* is now regarded as an entirely introduced species in England, demonstrating that change in our flora is nothing new.

Sinker used distribution maps, coincidence maps and dated surveys to discuss change in the 1985 Shropshire Flora compared with pre-1970. He considered that oligotrophic lakes and pools were the habitats most threatened, by drainage, eutrophication and agricultural development. Of the twelve species he used to illustrate the loss in this habitat, four were already extinct: *Damasonium alisma*, *Isoetes lacustris*, *Lobelia dortmanna* and *Pilularia globulifera*. Since 1985 we have probably lost another, *Baldellia ranunculoides* and of the other seven, *Apium inundatum* has continued to decline in the lowlands but there are apparent increases in the uplands. *Elatine hexandra* persists at both its old sites of Bomere Pool and Newton Mere, *Eleocharis acicularis*, *Littorella uniflora* and *Eleogiton fluitans* just about persist in their former sites and have some newly discovered sites, *Luronium natans* is possibly lost at Brown Moss but rediscovered at Bomere Pool and *Nuphar pumila* is gone from Blake Mere but persists at Cole Mere.

Acid peat bogs and wet heaths was a second habitat cluster at Sinker's highest risk level. His coincidence map included the already extinct *Scheuchzeria palustris* plus *Carex limosa*, *Drosera anglica* and *Drosera intermedia* which have all three now probably become extinct, but also *Eleocharis multicaulis*, *Osmunda regalis*, *Rhynchospora alba*, *Trichophorum germanicum* and *Utricularia minor* which are all more or less holding their own or have extra tetrad records since 1985.

The third habitat in Sinker's highest risk list was calcareous fens and mires. His list for coincidence mapping was *Blysmus compressus*, then and still extinct, *Parnassia palustris* and *Epipactis palustris*, now both lost from Crosemere and still decreasing, *Trollius europaeus* with very few extant sites and *Crepis paludosa* still decreasing. However also in the list were *Carex dioica*, *Eriophorum latifolium*, and *Samolus valerandi*, all currently considered stable and with new tetrad records.

The most recent systematic discussion of change in the flora of Shropshire was in Lockton & Whild (2005). They listed extinctions from the vice-county and detected an upward trend. The extinction list for the 1970-84 period included *Carex limosa*, *Hordeum secalinum*, *Persicaria mitis*, *Potamogeton lucens* and *Hymenophyllum wilsonii*. However *Hymenophyllum wilsonii* has since been recorded at its single site in New Pool Hollow on the Long Mynd, *Potamogeton lucens* has turned up at Willey Pools, and there are current records for *Hordeum secalinum*. For 1985 onwards the extinction list was *Sparganium natans*, *Gentianella campestris*, *Diphasiastrum alpinum*, *Rubus saxatilis*, *Epipactis leptochila*, *Potamogeton praelongus*, *Baldellia ranunculoides*, *Drosera anglica*, *Drosera intermedia*, *Potamogeton compressus* and *Potamogeton friesii*. Since that publication, *Diphasiastrum alpinum* has been refound (after 286 years) on the Stiperstones and *Potamogeton friesii* has appeared (although probably introduced) in the Newport Canal in 2013.

None of these are very encouraging trends and tend to support Sinker's contention that wetland and open water habitats are most threatened in Shropshire, but also suggest that the data are not quite entirely negative. In the rest of the present chapter the tetrad data from Sinker *et al.* from the period 1970-1984 is compared in some detail with the more recent 1985-2013 tetrad data in order to produce a general picture of change in the flora of Shropshire.

For most of the commonest species it is very difficult to assess change since they were not fully recorded at the tetrad level for the 1970-84 Flora. These so-called 'A' species - 205 taxa (actually 201 distinct species plus four aggregates) - were expected to be found 'almost certainly in every 10 km square and the majority in nearly every tetrad' and were recorded only at the 10 km square level. After two recording seasons four of these species (*Allium ursinum*, *Equisetum fluviatile*, *Equisetum palustre* and *Odontites vernus*) were transferred to being recorded at the tetrad level but this did not happen entirely consistently.

These decisions were criticised at the time but actually performed a valuable teaching role. Recorders concentrated on the 'A' list in the early seasons and developed a good knowledge of these species. This later made the task of recording all the other species much less overwhelming. However for much of the present analysis, it has been necessary to completely omit the 'A' species from the comparisons. Most 'A' species are in fact widely distributed and the omission will make little difference, but others are probably much less common and a few are even axiophytes.

Sinker and others provided many bryophyte records before 1985 and in more recent decades the records have improved greatly, but again the data are probably not yet sufficiently complete at the tetrad level to allow systematic comparison, and bryophytes have therefore reluctantly been excluded from the present analysis.

The current vascular plant database for vice-county 40 (Shropshire) includes information about 1,833 taxa from 966 tetrads, although there are further differences because the 1970-84 survey exceeded vice-county boundaries, including in particular some adjacent parts of Montgomeryshire. Apart from the 201 'A' species, all *Rubus* subgenus *Rubus* microspecies except for *Rubus caesius* and all microspecies of *Taraxacum* have also been omitted from the analysis since they have mainly been recorded by small numbers of experts in limited parts of the vice-county.

The result is a data matrix of 1,351 taxa × 966 tetrads. The word 'taxon' has been used throughout rather than 'species', since the list includes interspecific hybrids and a few consistently recorded intraspecific taxa such as *Lamiastrum galeobdolon* subspecies *argentatum*.

Two different approaches to the analysis of change have been adopted. In the next section the focus is on changes in the frequency of individual taxa and there follows, an assessment of change in the individual tetrads. It should however be remembered that the whole analysis is based on a single database, although different selections are made for different purposes. This means that conclusions from different parts of the analysis cannot be treated as independent pieces of evidence.

## Changes in the frequency of species

### Changes in the balance between native and introduced taxa

Following Preston *et al.* (2002a), Table 1 allocates the Shropshire flora to **native taxa**, which are present in Britain and Ireland without human intervention, and **introduced taxa**, introduced at least indirectly by humans. Introduced taxa are divided into **archaeophytes**, plants which became naturalised before 1500 when the New World was discovered and since then have come to occupy stable ecological niches, and **neophytes** for which there is no evidence of naturalised populations until after 1500 (with most species still not occupying stable ecological niches). **Casuals** are plants which are encountered as spontaneous introductions but which fail to persist. It should however be understood that many taxa will have a different origin in Shropshire – for example many native species are present here only as garden escapes and may even be described in the species accounts as casuals. The present analysis however follows the national rather than the local designations. The **miscellaneous** category in Table 1 includes taxa whose origin in UK is in doubt, hybrids between taxa in different origin groups and taxa considered nationally to be entirely planted in origin. The pre-1970 records are only very imprecisely comparable with the two later tetrad surveys and are included in the table mainly as a matter of completeness.

It appears that direct comparisons between the two surveys are reasonable as when the 'A' species and two major groups of microspecies are stripped from the

**Table 1.** Distribution of the vascular plant records from the three survey periods according to origin. 201 common 'A' species and microspecies of *Rubus* and *Taraxacum* are omitted from these data. (miscellaneous = origin uncertain, hybrids between types and entirely planted taxa).

Status		Total	Pre-1970	1970-1984	1985-2013	Change since 1984
<b>Native</b>	taxa	705	617	607	689	+82
	tetrads		13,076	49,586	47,457	-2,129
<b>Archaeophyte</b>	taxa	99	94	83	97	+14
	tetrads		1,597	6,908	6,104	-804
<b>Neophyte</b>	taxa	463	177	219	446	+227
	tetrads		1,059	5,852	9,344	+3,492
<b>Casual</b>	taxa	35	7	12	31	+19
	tetrads		12	23	170	+147
<b>Miscellaneous</b>	taxa	49	17	23	44	+21
	tetrads		179	957	1,166	+209
<b>Total</b>	taxa	1,351	912	944	1,307	+363
	tetrads		15,923	63,326	64,241	+915



totals, Table 1 shows that the 1970-84 and the 1985-2013 surveys have similar numbers of tetrad records.

The native species form the largest group of taxa (52.2% of the total) and the great majority of tetrad records. Although the 1985-2013 survey includes more native taxa than the 1970-84 survey, the overall number of tetrad records for native taxa actually falls (by 4.3%). This is an actual, not just a proportional, fall and therefore may well represent a genuine change towards vegetation less rich in native taxa.

The archaeophytes are quite a small group of taxa (7.3% of the whole) but contribute a disproportionately large group of tetrad records. Many are weeds of cultivation, including some which have been made very uncommon or even extinct by the use of selective herbicides and other changes in agricultural practice. As with the native taxa, there seems to be some recovery in number of taxa in the 1985-2013 data, but an overall fall in the number of tetrad records (by 11.6%). This is a group of plants likely to have been recorded equally well in both surveys and therefore, despite the re-discovery of several species, archaeophyte diversity at the tetrad level appears to be continuing to fall.

The neophytes are a large proportion of the species (34.3%) but a relatively small proportion of tetrad records, presumably because most do not form a stable part of long-lived vegetation types or even because their habitat is less widespread in Shropshire, (although there are a few neophytes such as *Mimulus* spp. which are quite well integrated into semi-natural vegetation). Nevertheless the biggest change since 1985 seems to be a doubling of neophyte taxa and an almost 60% increase in tetrad records of neophytes. It is not possible from these data to decide how much of this change is the result of more assiduous recording of borderline naturalised specimens and how much is an increase in the rate of penetration of Shropshire by neophytes but, in view of falls in tetrad scores for native and archaeophyte taxa, increased penetration may play some role. With the gradual increase in urbanisation there is probably also an increase in areas of the disturbed habitats which they are most likely to inhabit. The casuals have a similar pattern to the more established neophytes suggesting that recording decisions do have a definite part to play in the increase in neophyte records since casual records are usually the least definite. Similarly the increases in the miscellaneous group which is dominated by borderline-native plants and hybrids, many of which are increasingly well described in the literature, also suggests changes in recording decisions are important.

The vegetation of Shropshire clearly continues to be dominated by native taxa although at the tetrad level there are perceptible reductions in diversity. The small group of archaeophytes continues to contribute many, although probably declining, tetrad records. Neophytes and casuals, the more recent additions to the British flora, although clearly growing in numbers and tetrad records in Shropshire, still do not comprise a large proportion of our vegetation.

### Disappearing species

Altogether 123 taxa (apart from microspecies of *Rubus* and *Taraxacum*) with locatable records in Shropshire have not been recorded since 1970 when the 1970-84 'time slice' for the 1985 Flora began. Many are essentially casual occurrences of neophytes and only of limited interest, although there are records, such as for the nationally casual *Stachys annua*, recorded near Buildwas in 1876, 1882 and nearby in 1923, which suggest that even casual annuals can be more persistent than one might imagine. There are the well-known 19<sup>th</sup> century extinctions such as *Scheuchzeria palustris*, *Damasonium alisma* and *Isoetes lacustris* gone from the Meres, *Blysmus compressus* gone along with its calcareous fen habitat from the foot of Wenlock Edge, *Pseudorchis albida* from Benthall Edge and Oreton, *Dryopteris aemula* from Coalbrookdale, *Hornungia petraea* from the limestone and *Saxifraga hypnoides* from Titterstone Cleve. The processes of eutrophication, agricultural improvement and development gathered pace in the 20<sup>th</sup> century leading to further losses. *Ophrys insectifera* was lost from its few limestone sites around Wenlock Edge, the last in 1944, *Utricularia vulgaris* was last recorded in our lowland pools in 1930s, *Neottia cordata* (always very rare here and a possible early victim of climate change) was last seen in the hills in 1920, *Pilularia globulifera* was finally extinguished under dredgings removed from a Brown Moss pool in order to save the fish in the drought in 1976. Few cornfield archaeophytes appear to have become truly extinct in Shropshire before 1970 and all which did so were rare previously. The commonest are *Adonis annua* which had only three pre-1970 records, the last in 1935, and *Lolium temulentum* which had nine records, the last in 1899.

A further 64 taxa were recorded in the pre-1970 data and in the Sinker survey and have not been seen since 1985. The majority are again irregularly recorded microspecies or further rare and probably chance occurrences of neophytes and casuals. These include *Myosurus minimus*, seen once in arable fields by Betton Pool in 1970, and *Lathyrus aphaca*, with one, possibly two records as a casual in 1963 and 1980. Some 16 native species appear finally to have gone from the vice-county. Most of them, such as *Cuscuta epithymum*, *Daphne mezereum* and *Oenanthe lachenalii* were

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doubtfully native in the vice-county. *Persicaria mitis* has only ever had three, apparently casual, scattered records in ditches, the last in 1976. Probably the most significant loss is *Carex limosa*, which, along with *Scheuchzeria palustris*, is a component of the M1 *Sphagnum auriculatum* bog pool community and which seems to have been last seen at Clarepool Moss in 1976. It should also be borne in mind that several other species which have been recorded since 1985 are possibly now extinct, as listed in the first section of this chapter.

### Appearing species

The age of systematic recording has allowed the addition of many new taxa to the Shropshire Flora list: 160 taxa were added 1970-84 and a further 355 from 1985, although 38 which were new in 1970-84 have not been recorded since 1985. Thirty two taxa added from 1970-84 and 47 added from 1985 were microspecies of *Rubus*, *Hieracium* or *Taraxacum*. Two added 1970-84 and 17 from 1985 are considered entirely planted in the vice-county. The rest of the new taxa are summarised by origin in Britain in Table 2.

Assuming that the time slice for Sinkler *et al.* was 14 years and for Lockton and Whild was 28 years the annual pace of adding new taxa seems fairly constant and the balance between the different origin groups is also similar. The vast majority of the new additions are neophytes. These are mostly single or a few records of garden escapes and tree seedlings and probably to a great extent reflect changing attitudes to what should be recorded. However, *Acer platanoides*, *Buddleja davidii*, *Lunaria annua*, *Prunus laurocerasus* and *Quercus cerris*, which were all recorded in Sinkler *et al.* for the first time in 10 or more tetrads, had reached 100 tetrads or more in the 1985-2013 survey. Many other new appearances 1970-84, such as *Azolla filiculoides*, *Crocasmia* × *crocasmiflora*, *Elodea nuttallii*, *Heracleum mantegazzianum*, *Impatiens capensis*, *Lonicera nitida*, *Muscari armenica*, *Rosa rugosa*, *Solidago canadensis* and *Tellima*

*grandiflora*, increased to over 10 tetrads in 1985-2013. It seems likely that at least some of these increases represent real and, in a few cases, potentially deleterious changes in the Shropshire flora.

Of the 202 neophytes appearing for the first time in 1985-2013, most are recorded in 1-5 tetrads, but 16 taxa were recorded in more than 10 tetrads. Nine, of which *Alchemilla mollis*, *Cotoneaster* sp., *Crassula helmsii*, *Lemna minuta* and *Prunus lusitanica* are probably the most interesting, were recorded in more than 25 tetrads and again constitute definite and even worrying additions. The outstanding newcomer neophyte in the 1985-2013 survey is *Lamiastrum galeobdolon* subsp. *argentatum*, with 117 tetrad records. Possibly overlooked previously, it is difficult to believe that it is not becoming considerably more frequent. It is also notable as a taxon which is able to appear in old habitats: most neophytes are largely confined to disturbed and marginal habitats and are therefore seen as less likely to change semi-natural communities. Another taxon which needs to be considered in this context is *Hyacinthoides* × *massartiana*. As a hybrid between an alien and a native species it is listed in Table 2 within 'miscellaneous'. First recorded in 1999 it now has records from 53 tetrads and although it is not considered to spread in the wild it will certainly appear in the margins of old woodlands with the possibility of exchanging genes with the native *Hyacinthoides non-scripta* in pollination.

Two archaeophytes (*Papaver hybridum* and *Isatis tinctoria*) were added in the 1970-85 survey and a further two (*Polygonum rurivagum* and *Fumaria vaillantii*) in 1985-2013. All four remain rare.

There are some notable recent 'additions' to the native flora. In 1970-84 two nationally uncommon natives were first recorded: *Carex digitata*, a nationally scarce plant of open situations in limestone woodland, was recorded in Tick Wood near Ironbridge and *Festuca*

**Table 2.** Numbers of taxa added to the Shropshire flora in 1970-84 and in 1985-2013, classified by national origin. (miscellaneous = origin uncertain or hybrids between types)

	Taxon first appeared in:			
	1970-84		1985-2013	
	numbers	% of total added	numbers	% of total added
<b>Native</b>	27	22	56	19
<b>Archaeophyte</b>	2	2	2	1
<b>Neophyte</b>	85	69	203	70
<b>Casual</b>	7	6	21	7
<b>Miscellaneous</b>	4	3	9	3
<b>Total</b>	125	101	291	100

*altissima*, which grows on ledges in humid wooded ravines, was found on two tributaries of the Severn near Highley. Two further sites for *Festuca altissima* at Ironbridge and Oaks Wood, Pontesbury have been added in the new Flora. Not so uncommon, but close to the north west edge of its range in Britain, *Cirsium acaule* was first noticed on the Carboniferous Limestone in 1970 and is now also known from Wenlock Edge and Titterstone Cleve. Further significant 'additions' to the native flora in 1985-2013 include *Carex muricata* subsp. *muricata*, only known from five other places in Britain, which was found on the Carboniferous Limestone at Oswestry in 1999 and the gametophyte of *Trichomanes speciosum* which now has records in crevices on sandstone cliffs in both north and south Shropshire. It seems reasonable to assume that all these are examples of pre-existing populations which have been discovered, rather than plants entering Shropshire for the first time.

Other significant additions of native species such as *Agrostis vinealis*, *Dryopteris borrieri* and possibly even *Alchemilla glabra* in 1970-84 and *Dryopteris cambrensis* and *Gymnadenia borealis* in 1985-2013 are probably the result of better characterisation in the literature. This is also true for *Sorbus cuneifolia* growing, like *Sorbus anglica*, on limestone cliffs at Llyncllys and *Juncus foliosus*, distinguished from *Juncus bufonius* at several sites in recent years, and also for quite a large number of interspecific hybrids recorded for the first time. Other species such as *Viburnum lantana* (often planted in 'conservation' hedges) and *Cardamine bulbifera* are likely escapes from cultivation and others such as *Fumaria bastardii*, *Herniaria glabra*, *Silene conica* and the 2013 record for *Orobancha hederæ* are probably essentially casual occurrences of native species.

A special case is the assemblage which has developed here as elsewhere by roadsides associated with winter applications of salt. The coastal salt marsh native *Cochlearia danica* was actually known from roofs in Shrewsbury and Oswestry in the 19<sup>th</sup> century, but first noticed here by roads in 1993 and is now recorded in the roadside habitat from 135 tetrads. Similarly the saltmarsh grass *Puccinellia distans* had a few early records but was recorded by roads in 2001 and is now known from 12 tetrads. Another native, *Plantago coronopus*, has always had a distribution here but has recently increased in frequency from six tetrads in 1970-84 to 22 in 1985-2013, largely in the roadside assemblage. Other natives in this 'roadside halophyte' category include *Atriplex littoralis*, *Catapodium maritimum*, *Spergularia marina* and probably *Juncus ranarius*, all of which have appeared for the first time in Shropshire in recent years in this assemblage.

## Reappearing species

Taxa known from Shropshire from before 1970 and reappearing in the 1985-2013 survey are mostly microspecies and rare casual records of neophyte species, but there are some substantial reappearances, for example of *Chamaecyparis lawsoniana*, *Quercus rubra* and *Sorbus intermedia*, which are now recorded quite frequently and although they may be largely planted will also include some self-set plants. Also interesting is the reappearance post-1985 of the nationally scarce and critically endangered archaeophyte *Galeopsis angustifolia*, the only slightly commoner archaeophyte *Legousia hybrida* and the nationally critically endangered *Ranunculus arvensis*. All had at least ten pre-1970 records but were considered extinct in v.c. 40 in 1970-84. All three are still very much more uncommon here than they had been pre-1970 but may represent persistence rather than recolonisation.

Reappearing native species include *Pastinaca sativa*, which seems to have re-invaded Shropshire along the M54 in recent years, and *Bromus racemosus* which seems now to be genuinely increasing in arable fields and meadows. Other taxa in this category which are not obviously increasing include *Pimpinella major*, rediscovered in 2009 at the site by the A5 where it was first recorded in 1800, *Rubus saxatilis*, likewise rediscovered at one of its pre-1970 sites, *Erodium maritimum*, last recorded in the Bridgnorth area in 1916 and now known from two sites and *Limosella aquatica*, not recorded at any of its Severn-side sites since 1956 but found recently at Venus Pool (not far from the Severn) in great quantity. Also, *Carex oederi* has reappeared (presumably from its seed bank) at Brown Moss, *Dryopteris oreades* was rediscovered in 2011 at Charles Sinker's 1962 site on Titterstone Cleve and at a fresh site on Earl's Hill in 2002, and *Bromus benekenii* was refound and positively identified at the site of Sinker's 1963 tentative identification. All these presumably represent survival of taxa previously feared extinct.

## Changes in frequency

This category is intended to highlight those taxa persisting in Shropshire throughout botanical recording history which show marked increases or decreases in frequency. Changes in the frequency of the 201 'A' species are not possible to assess quantitatively but it is interesting to look at their frequency in the 1985-2013 dataset when they were recorded at the tetrad level. Altogether, 85 'A' species are present in less than half of the possible tetrads. *Hyacinthoides non-scripta* is the commonest of the axiophyte 'A' species with 612 tetrads, *Oxalis acetosella* is next with 415 tetrads, *Anemone nemorosa* has 360 tetrads, *Allium*



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*ursinum* 267, *Trisetum flavescens* 249, *Spergula arvensis* 122 and *Equisetum fluviatile* 119. It would clearly have been valuable to include all these taxa in the general comparison so that these low scores could be placed in the context of change, in particular the old woodland species and the nationally vulnerable *Spergula arvensis*.

Among the non-axiophyte 'A' species, *Odontites vernus* is the rarest with just 57 tetrad records, but *Arenaria serpyllifolia* has only 117 and *Aethusa cynapium*, *Agrimonia eupatoria*, *Asplenium ruta-muraria*, *Calystegia silvatica*, *Cymbalaria muralis*, *Eleocharis palustris*, *Equisetum palustre*, *Euphorbia peplus*, *Hypericum tetrapterum*, *Polygonum arenastrum*, *Silene flos-cuculi* and *Sinapis arvensis* all have fewer than 200 tetrad records.

Ecologically, of these 14 species, three frequent fairly open vegetation on dry, base-rich soils and four fairly mesotrophic wetlands but the rest are weeds of cultivation. The relative uncommonness here of the only two neophytes in the 'A' list, *Calystegia silvatica* and *Cymbalaria muralis*, both of which are very common in urban areas, is possibly a reflection of the relative sparseness of the human population in Shropshire, since both are probably largely garden escapes.

Returning to the taxa recorded at tetrad level in both surveys, there are some striking changes in numbers of tetrads in a few quite common species. Twenty one species have been lost from more than 100 tetrads since 1984. *Cruciata laevipes* and *Linaria vulgaris* appear to have lost 263 and 200 tetrad records respectively, more than 50% of their totals. These are both nowadays largely wayside plants and this is probably also true of other 'big losers' *Knautia arvensis*, *Cytisus scoparius*, *Ulex europaeus* and *Tragopogon pratensis*, also possibly *Vicia hirsuta* and *Silene latifolia*, and *Primula veris* which is not far behind with 131 (35%) tetrads fewer. Others with falls in numbers of tetrad records of more than 100 which are likely to have ecological significance include: *Persicaria hydropiper* and *Gnaphalium uliginosum* from damper waysides; a few more definitely wetland species, *Senecio aquaticus*, *Ranunculus sceleratus*, *Alisma plantago-aquatica* and *Glyceria notata*; and two plants with urban connotations: *Armoracia rusticana* and *Senecio squalidus*.

A further 52 taxa have a reduction of 50-100 tetrad records between the two surveys. This includes 14 axiophytes: *Betonica officinalis*, *Sanicula europaea*, *Trifolium campestre*, *Achillea ptarmica*, *Bidens cernua*, *Calluna vulgaris*, *Briza media*, *Clinopodium vulgare*, *Galium odoratum*, *Lathyrus linifolius*, *Glebionis segetum*, *Orchis mascula*, *Vaccinium myrtillus* and *Aira caryophyllaea*. None of these present any taxonomic or identification problems and together they suggest deterioration in a wide range of semi-natural habitat types. Only four in this list of 52 are neophytes:

*Mimulus guttatus*, *Trifolium hybridum*, *Symphoricarpos albus* and *Aesculus hippocastanum*.

There are similarly dramatic increases in some taxa; 24 have 100 extra records or more post-1984. Up to 13 of these, such as *Larix decidua*, *Poa humilis*, *Dryopteris affinis* and *Salix × reichardtii*, probably represent changes in recording practice or improved description in the literature. A further 11 seem to represent genuine expansion and include the recent arrivals *Acer platanoides*, *Lamium galeobdolon* ssp. *argentatum*, *Buddleja davidii*, *Prunus laurocerasus* and *Cochlearia danica* mentioned previously. Other species which seem to have spread rapidly since 1984 are *Lactuca serriola*, *Epilobium ciliatum*, *Atriplex prostrata*, *Cerastium glomeratum*, *Myosotis sylvatica*, *Rumex sanguineus* and *Prunus avium*. The species which have generated the biggest increase in tetrad records are *Epilobium ciliatum* (257 extra tetrads), a neophyte probably still expanding in UK, and *Myosotis sylvatica* (241 extra tetrads), a native species but much cultivated in gardens, which was thought to be under-recorded in 1970-84 because of doubts about the degree of naturalisation but is probably also genuinely expanding from gardens into woodlands. Many people find *Epilobium* species difficult to distinguish, so *Epilobium ciliatum* may also have been under-recorded in 1970-84. The increase in almost all these probably genuinely expanding species can be seen as deleterious; many are neophytes and the natives are opportunist ruderals invading disturbed ground. The only axiophyte in this category is *Dryopteris affinis*, a change probably more about better characterisation than genuine increase.

A further 44 taxa have 50-100 extra tetrad records since 1984. Fifteen of these are neophytes and include the known invasive species *Impatiens glandulifera* and *Lemna minuta* and the potentially invasive *Chamaecyparis lawsoniana*, *Lunaria annua*, *Lepidium didymum*, *Vinca major*, *Pentaglottis sempervirens*, *Pilosella aurantiaca* and *Alchemilla mollis*, although many of these are garden escapes and may just be being recorded more readily. Of the 44, 24 are nationally native but some such as *Meconopsis cambrica*, *Carex pendula*, *Dipsacus fullonum*, *Aquilegia vulgaris*, *Buxus sempervirens* and *Geranium lucidum* are also probably mainly expanding as garden escapes although again many may just be being recorded more readily. A large number of native taxa are probably now being recognised more frequently due to better descriptions in the literature, for example *Epilobium tetragonum*, *Epilobium obscurum*, *Hypericum × desetangii*, *Phleum bertolonii*, *Fumaria muralis*, *Aphanes australis* and *Quercus × rosacea* but others, particularly *Taxus baccata*, *Schedonorus arundinaceus*, *Carex hirta*, *Carex remota*, *Galeopsis bifida*, *Chenopodium rubrum*,

*Cerastium semidecandrum*, *Geranium lucidum* and the archaeophytes *Silene × hampeana*, *Veronica hederifolia*, *Papaver somniferum* and *Avena fatua* may well be genuinely expanding, largely but not entirely in marginal habitats. Two axiophytes: *Euonymus europaeus*, of hedgerows and woodlands with 61 extra tetrad records, and *Carex pilulifera*, of heathland with 56 extra tetrad records, are interesting but rather isolated positive increases. Large increases in two other axiophytes, *Aphanes australis* and *Carex spicata*, probably mainly represent improvements in characterisation. Even *Carex pilulifera* may just be better recorded now.

The above analysis ignores the fact that small changes in numbers of tetrads can be a quite profound change in the case of some of the least common species. If the change in tetrad numbers is recalculated as a percentage of the number in the 1970-84 survey further important changes are revealed. 407 taxa are new or reappearing, 539 show no change or an increase and 405, almost a third of taxa recorded in the 1985-2013 survey and directly comparable with the 1970-84 survey, show a reduction in number of tetrad records.

Among the taxa which are becoming scarcer, the 47 in Table 3 have five or fewer tetrad records in the 1985-2013 survey and therefore must be considered close to extinction in Shropshire. Several of these may be lost already: *Gentianella campestris* was last recorded in 1986 and the 1986 and 1995 records for *Potamogeton praelongus* will probably be the last, other than as reintroductions. However, many of the taxa in this list (the ones in red) are only barely naturalised introductions, demonstrating the problem with lists of 'rare' species. Some of the apparently reducing neophytes in the list, notably *Diplotaxis muralis*, *D. tenuifolia* and *Lepidium draba*, are described as expanding species in Britain as a whole. In this context, it is interesting to mention *Medicago arabica*, with only one or two

records in Shropshire and not apparently increasing or reducing here. This species has a Mediterranean centre of distribution but is native in south east Britain. Its recent increase in many parts of Britain, including areas quite close to Shropshire (Trueman *et al.* 2013), has been put forward as evidence for climate change (Preston *et al.* 2002b).

Other species with few records must also be vulnerable even if there is no apparent decrease between the 1970-84 and 1985-2013 surveys. Native species with a long history as natives present in recognised vegetation, and with five or fewer records in 1985-2013, are listed in Table 4. Some presumed under-recorded *Hieracium* species have been omitted, but relevant species in Table 3 have been included in Table 4 for completeness.

### Changes in axiophyte frequency

Most of the species in Table 4 are axiophytes. So as to focus on changes particularly relevant for conservation, the figures for percentage changes in the axiophyte taxa are summarised in in Table 5. A further 13 axiophytes were only recorded in the 1985-2013 survey and have been discussed previously.

Table 5 shows that a majority of axiophytes showed no change or increases in the number of records but that a large minority of axiophytes had negative changes between the two surveys. Of these taxa, 22 have apparently lost half their number of tetrad records. These are listed in Table 6, together with six more which were recorded in 5 tetrads or fewer in the 1985-2013 survey and are therefore particularly threatened in Shropshire.

Some of the above, such as *Carex lasiocarpa*, *Coeloglossum viride*, *Cynoglossum officinale*, *Drosera anglica*, *Epipactis palustris*, *Gymnadenia densiflora*, *Genista anglica*, *Hypochaeris glabra*, *Luronium natans*, *Platanthera bifolia* and *Potamogeton alpinus*, were

**Table 3.** Decreasing taxa with five tetrad records or fewer in the 1985-2013 survey.

<i>Allium carinatum</i>	<i>Drosera anglica</i>	<i>Hypochaeris glabra</i>	<i>Potamogeton alpinus</i>
<i>Allium oleraceum</i>	<i>Epipactis leptochila</i>	<i>Lepidium draba</i>	<i>P. compressus</i>
<i>Atropa belladonna</i>	<i>E. palustris</i>	<i>Lilium martagon</i>	<i>P. praelongus</i>
<i>Bromus lepidus</i>	<i>Fragaria ananassa</i>	<i>Linaria × dominii</i>	<i>Potentilla recta</i>
<i>Calla palustris</i>	<i>Genista anglica</i>	<i>L. × sepium</i>	<i>Ribes alpinum</i>
<i>Carex lasiocarpa</i>	<i>Gentianella campestris</i>	<i>Luronium natans</i>	<i>Rosa obtusifolia</i>
<i>Coeloglossum viride</i>	<i>Gymnadenia densiflora</i>	<i>Nepeta cataria</i>	<i>Scabiosa columbaria</i>
<i>Crocus nudiflorus</i>	<i>Helleborus viridis</i>	<i>Nuphar pumila</i>	<i>Sison amomum</i>
<i>C. vernus</i>	<i>Hieracium salticola</i>	<i>Papaver hybridum</i>	<i>Sisymbrium altissimum</i>
<i>Dactylorhiza × grandis</i>	<i>H. umbellatum</i>	<i>Petroselinum crispum</i>	<i>Thymus pulegioides</i>
<i>Diplotaxis muralis</i>	<i>Hippuris vulgaris</i>	<i>Platanthera bifolia</i>	<i>Valeriana pyrenaica</i>
<i>D. tenuifolia</i>	<i>Hyoscyamus niger</i>	<i>Poa chaixii</i>	

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**Table 4.** Vulnerable native species in Shropshire – species with a long history as natives present in recognised vegetation and with five or fewer records in 1985-2013.

<i>Allium oleraceum</i>	<i>D. intermedia</i>	<i>Hippuris vulgaris</i>	<i>P. friesii</i>
<i>Alopecurus aequalis</i>	<i>Dryopteris oreades</i>	<i>Hieracium lasiophyllum</i>	<i>P. praelongus</i>
<i>Andromeda polifolia</i>	<i>Elatine hexandra</i>	<i>Hordeum secalinum</i>	<i>Pyrola minor</i>
<i>Astragalus glycyphyllos</i>	<i>Eleocharis acicularis</i>	<i>Huperzia selago</i>	<i>Rhynchospora alba</i>
<i>Astrantia major</i>	<i>E. multicaulis</i>	<i>Hymenophyllum wilsonii</i>	<i>Rosa micrantha</i>
<i>Atropa belladonna</i>	<i>Epipactis leptochila</i>	<i>Hypochaeris glabra</i>	<i>R. spinosissima</i>
<i>Baldellia ranunculoides</i>	<i>E. palustris</i>	<i>Hypopitys monotropa</i>	<i>Rubus saxatilis</i>
<i>Bromopsis benekenii</i>	<i>E. phyllanthos</i>	<i>Impatiens noli-tangere</i>	<i>Samolus valerandi</i>
<i>Callitriche hermaphrodita</i>	<i>Eriophorum latifolium</i>	<i>Limosella aquatica</i>	<i>Scabiosa columbaria</i>
<i>Carex digitata</i>	<i>Erodium maritimum</i>	<i>Luronium natans</i>	<i>Silene nutans</i>
<i>C. lasiocarpa</i>	<i>Erophila majuscula</i>	<i>Melica nutans</i>	<i>Sorbus anglica</i>
<i>C. lepidocarpa</i>	<i>Euphrasia arctica</i>	<i>Myrica gale</i>	<i>S. cuneifolia</i>
<i>C. muricata</i> ssp. <i>muricata</i>	<i>E. confusa</i>	<i>Nepeta cataria</i>	<i>Sparganium natans</i>
<i>C. oederi</i>	<i>Festuca altissima</i>	<i>Nuphar pumila</i>	<i>Spiranthes spiralis</i>
<i>Circaea</i> × <i>intermedia</i>	<i>F. filiformis</i>	<i>Orobancha minor</i>	<i>Stellaria palustris</i>
<i>Cirsium acaule</i>	<i>Filipendula vulgaris</i>	<i>Persicaria minor</i>	<i>Torilis nodosa</i>
<i>C. dissectum</i>	<i>Genista anglica</i>	<i>Phegopteris connectilis</i>	<i>Trichomanes speciosum</i>
<i>Cladium mariscus</i>	<i>Gentiana pneumonanthe</i>	<i>Pimpinella major</i>	<i>Turritis glabra</i>
<i>Coeloglossum viride</i>	<i>Gentianella campestris</i>	<i>Platanthera bifolia</i>	<i>Utricularia minor</i>
<i>Cryptogramma crispa</i>	<i>Gymnadenia borealis</i>	<i>Polypodium cambricum</i>	<i>Valerianella dentata</i>
<i>Diphasiastrum alpinum</i>	<i>G. densiflora</i>	<i>Potamogeton alpinus</i>	<i>Vicia lathyroides</i>
<i>Drosera anglica</i>	<i>Helleborus viridis</i>	<i>P. compressus</i>	<i>Viola canina</i>

recorded quite frequently before 1970 and seem to have been declining ever since. Most of the others, such as *Anthemis cotula*, *Bidens cernua*, *Catabrosa aquatica*, *Campanula latifolia*, *Centaurea scabiosa*, *Filago vulgaris*, *Genista tinctoria*, *Glebionis segetum*, *Pedicularis palustris*, *Potamogeton perfoliatus*, *Ranunculus fluitans*, *Scabiosa columbaria* and *Typha angustifolia* seem to have declined predominantly between the two tetrad surveys. A wide range of habitats is included, although woodland is not prominent, but a variety of grassland and wetland situations are well represented.

Quite large numbers of axiophytes showed a percentage increase in tetrad numbers between the two tetrad surveys. Apart from the 15 which have been re-found after being unrecorded in the 1970-84 survey, 168 taxa showed a positive percentage increase in numbers of tetrads and 119 taxa show at least a 33% increase. By their very nature one would not expect many axiophytes to be strong colonisers, so much of this increase is likely to have a different explanation. The majority represent quite small numbers of new records, probably encouraged by the increase in attention being paid to axiophytes, and others, such as *Aphanes australis*, *Stellaria pallida* and *Ranunculus penicillatus* represent improvements in characterisation in the literature. However, big increases in tetrad numbers of certain axiophytes, such as *Dactylorhiza praetermissa*,

*Empetrum nigrum*, *Euonymus europaeus*, *Filago minima*, *Ophrys apifera*, *Origanum vulgare*, *Orobancha rapum-genistae* and *Ranunculus parviflorus*, may possibly have biological explanations. As is suggested by this list, increasing axiophytes are as diverse in habitat as decreasing axiophytes, with the same bias towards grassland and wetland habitats, suggesting that the balance at both ends is more to do with the species richness of the habitat than threats to specific habitats.

## Changes in the character of the tetrads

In this section, the botanical character of the individual tetrads is explored and in many cases mapped against the Shropshire outline. In Shropshire we have two sets of data for two time periods, so it is theoretically possible to detect spatial changes between the two time periods by comparing maps for the two periods and this has been attempted below.

Some differences have been eliminated systematically, notably by omitting the 'A' species and the microspecies of *Taraxacum* and *Rubus* subgenus *Rubus* except for *Rubus caesius*. Also, Sinker *et al.* (1985) was not a vice-county Flora. It included small portions of surrounding vice-counties and omitted a few parts of v.c. 40 especially in the east, therefore all the tetrads



**Table 5.** Changes in axiophyte tetrad records between the 1970-84 and 1985-2013 periods

	Overall % changes		Changes of 50% or more	
	taxa	Tetrads	taxa	Tetrads
Negative % changes:	150	-3,055	22	-446
Positive (or no) % change	193	+1,687	102	+1,069

**Table 6.** Axiophytes showing more than 50% reduction in tetrad records between the 1970-84 and 1985-2013 surveys plus other reducing axiophytes with five tetrads or fewer in the 1985-2013 survey

Species	No of tetrads before 1970	No of tetrads 1971-1985	No of tetrads since 1985	Difference between 1985 and now	% change since 1985
<i>Platanthera bifolia</i>	40	8	1	-7	-88%
<i>Catabrosa aquatica</i>	9	30	9	-21	-70%
<i>Glebionis segetum</i>	36	82	27	-55	-67%
<i>Gymnadenia densiflora</i>	37	9	3	-6	-67%
<i>Scabiosa columbaria</i>	12	9	3	-6	-67%
<i>Drosera anglica</i>	10	3	1	-2	-67%
<i>Pedicularis palustris</i>	34	34	12	-22	-65%
<i>Anthemis cotula</i>	13	67	24	-43	-64%
<i>Centaurea scabiosa</i>	23	43	17	-26	-60%
<i>Genista tinctoria</i>	73	67	27	-40	-60%
<i>Potamogeton perfoliatus</i>	15	54	22	-32	-59%
<i>Bidens cernua</i>	36	146	67	-79	-54%
<i>Ranunculus fluitans</i>	8	54	25	-29	-54%
<i>Cynoglossum officinale</i>	51	21	10	-11	-52%
<i>Filago vulgaris</i>	17	25	12	-13	-52%
<i>Typha angustifolia</i>	16	35	17	-18	-51%
<i>Campanula latifolia</i>	26	54	27	-27	-50%
<i>Genista anglica</i>	35	10	5	-5	-50%
<i>Epipactis palustris</i>	15	4	2	-2	-50%
<i>Allium oleraceum</i>	4	2	1	-1	-50%
<i>Hypochaeris glabra</i>	13	2	1	-1	-50%
<i>Nuphar pumila</i>	4	2	1	-1	-50%
<i>Coeloglossum viride</i>	38	8	5	-3	-38%
<i>Potamogeton compressus</i>	8	6	4	-2	-33%
<i>Carex lasiocarpa</i>	8	3	2	-1	-33%
<i>Luronium natans</i>	31	5	4	-1	-20%
<i>Potamogeton alpinus</i>	20	5	4	-1	-20%
<i>Thymus pulegioides</i>	4	5	4	-1	-20%

which do not feature in both data sets have also been eliminated from the analysis. Finally, there are many tetrads which after all the above have been removed are represented by extremely short lists of species. In many cases these are peripheral part-tetrads, but also the removal of the 'A' species could conceivably reduce a tetrad with 200 records to zero records, clearly affecting the analysis. Some preliminary analyses suggested that the major trends ceased to change greatly after tetrads with fewer than 10 species had been eliminated, so this standard has been adopted throughout. After these standardisations, the database finally available for ordination analysis consists of data for 1,400 taxa  $\times$  1,804 tetrads, 900 tetrads for the 1970-84 survey and 904 tetrads for the 1984-2013 survey.

Two methods of analysis have been used. First of all the distribution of the 359 vascular plant axiophytes, the taxa selected to indicate the habitats considered important for conservation, has been explored using coincidence maps. The rest of the analysis applies the method of ecological ordination to the complete data set of 1,400 taxa.

The ordination method of correspondence analysis (also known as reciprocal averaging; Hill, 1973, 1974) proceeds by assessing similarity between all possible pairs of samples according to the species they have in common, and the species which they lack in common but which are present in other samples. The computer program DECORANA, (Hill & Gauch, 1980) was written to apply this method to large sample sets and to eliminate various problems. The output extracts successive, theoretically independent trends which can be represented as tables in which every species and every sample have numerical positions on each of the trends. Each trend is called an ordination axis. It is usually the task of the investigator to identify the (hopefully ecological) causes of the different trends, typically by comparing the species at the extremes. The version used in the present study is within the CANOCO suite of programs (Ter Braak & Smilauer, 2002) which is used to extract the four strongest axes in a set of samples according to the species they contain.

Tetrad species lists for a vice-county can be used as samples and subjected to ordination in order to attempt to understand the main trends between the tetrads which, for example, might represent different regions, as in Trueman *et al.* (1995). A tetrad is however a very large area of land and will often include a wide range of ecological communities, so any attempt to compare tetrads in this way will be unlikely to generate sharp distinctions.

DECORANA axes can be converted into a classification of samples using the program TWINSpan (Hill 1979), which is probably the best way to explore these trends on maps of the vice-county. This is also undertaken below.

### Axiophyte coincidence mapping

Using the data set described above, it is possible to obtain an overall axiophyte score for every tetrad for both 1970-1984 and 1985-2013 surveys. The balance for both surveys is shown in Table 7.

**Table 7.** Range in axiophyte scores per tetrad in the 1970-84 and 1985-2013 surveys

Range in axiophyte score per tetrad	Survey	
	1970-84	1985-2013
0-19	541	623
20-39	261	165
40-59	61	75
60-79	30	28
80-99	6	9
100+	1	4
Total tetrads	900	904
Average score	19.53	18.17

Because tetrads with fewer than ten taxa overall have been removed, the 1985-2013 survey has four extra tetrads. However Table 7 shows that the average axiophyte score is slightly higher in the 1970-84 survey. With equal sized categories the numbers of axiophytes decrease exponentially from the lowest to the highest categories with very few high scores. In both surveys more than half the tetrads have fewer than 20 axiophytes. This lowest group is however 82 tetrads larger in the 1985-2013 survey. Furthermore, the next group, with 20-39 axiophytes per tetrad, is 96 smaller in 1985-2013. The 40-69 category is 14 larger and the 60-79 category is two smaller in the later survey. In the two highest categories the 1985-2013 survey has the larger number of tetrads but the total number of tetrads in these two categories is very small.

The simplest explanation of these results is that in the later survey some of the tetrads with the most conservation-valuable sites have seen increases in that value, either due to improved habitat management or more assiduous survey or a combination of both. The 'general run' of tetrads has on the other hand seen a decrease in conservation value, either due to a genuine deterioration or to less assiduous survey or to both.

The pairs of values for each category in Table 7 can be compared using a statistical homogeneity test with Chi squared. The pairs of values are very different between the two surveys (the overall Chi squared is 31.34 with 5 degrees of freedom) and the probability of there being no difference is less than 1 in 1,000 ( $p = 0.001$ ). The big contribution to the Chi squared clearly comes from the 0-19 and 20-39 categories. The conclusion, therefore, is that there are significant differences between the two surveys in numbers of axiophyte species in the different categories, especially the increase in the 0-19 category and the decrease in the 20-39 category.

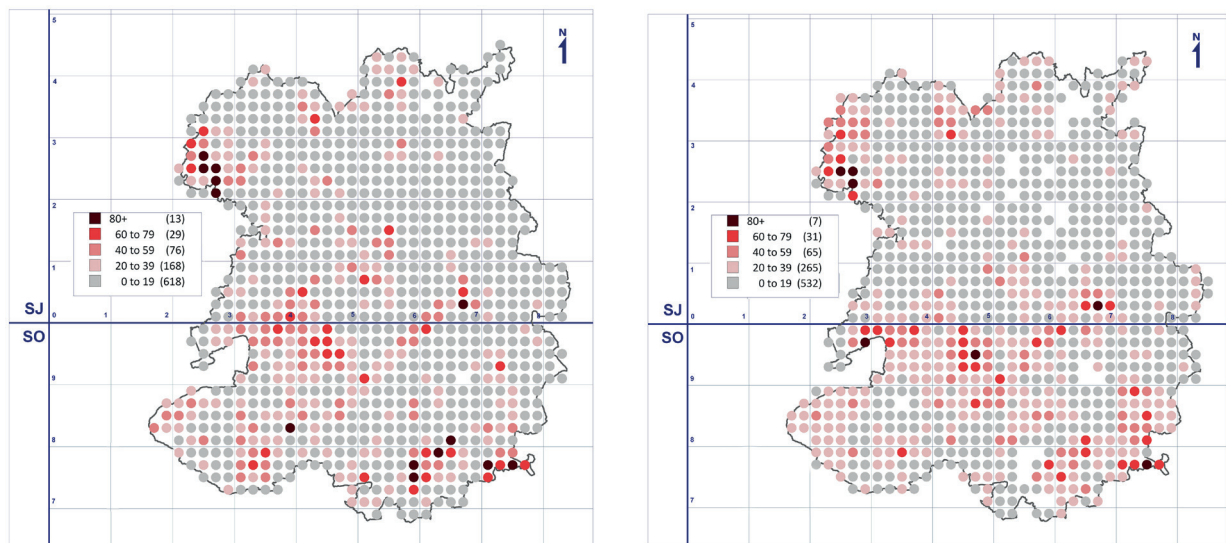
In Figure 1 the data from Table 7 are displayed on tetrad maps of the vice-county. Figure 1 shows that both coincidence maps pick out the same areas as rich in axiophytes, with centres of diversity representing the Meres and Mosses area, the Carboniferous Limestone south of Oswestry, the Long Mynd and Stiperstones uplands, the Shrewsbury (Haughmond Hill and Bomere Pool) and Telford areas, Wenlock Edge, Clun Forest, Brown Clee and Titterstone Clee, the Lower Severn Valley and the Wyre Forest.

The quality of these 'hot-spots' in most cases increases in the 1985-2013 survey. This may be explained by a

more thorough investigation of areas known to be good in the later survey and by a tendency to focus on the axiophytes which had not been distinguished in the 1970-84 survey. There has also been a general trend for many of these areas to come under protection and conservation management during the time period of these surveys and this may also have had a positive effect on the 'hot-spot' tetrads.

It is, however, in the 20-39 category that the biggest changes seem to be taking place. In the 1970-84 survey the group of tetrads in this category forms a coherent matrix around many of the high scoring areas, particularly in the south of the county, where it surrounds the high-scoring tetrads of Wenlock Edge, and offers links with the Clee, Telford and Shrewsbury areas and via the Clees with the Wyre and the Lower Severn. In the 1985-2013 survey many of these tetrads have transferred to the lowest category.

The maps appear to demonstrate an increasing polarisation between the conservation-rich and conservation-poor areas of the vice-county and an overall weakening of the ecological network.



**Figure 1.** The Shropshire tetrads showing the distribution of axiophyte taxa at the tetrad level. The map on the right shows the distribution in the 1970-1984 survey and the map on the left shows the distribution in the 1985-2013 survey. All 'A' species as defined in Sinker *et al.* 1985 have been omitted from the analysis as are all tetrads not included in both surveys or represented by less than 10 species after elimination of the 'A' species.



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**Table 8.** Eigenvalues of the first four ordination axes of a DECORANA ordination of the combined 1970-84 and 1985-2013 database for Shropshire

Ordination axis	1	2	3	4
Eigenvalues	0.255	0.151	0.110	0.107

### DECORANA analysis

The strength of the trends extracted in a DECORANA analysis are represented by eigenvalues which measure the strength of the ordination axes with a maximum strength of 1. The eigenvalues for the four strongest axes in the Shropshire data are shown in Table 8.

None of these would be considered to be strong axes but, bearing in mind the likelihood of a great deal of variation *within* many individual tetrads, strong axes would not be expected. The first two are clearly strongest and most worthy of consideration.

Table 9 shows the extreme scoring species with an overall frequency of 20% or more in the study in the

DECORANA analysis. The highest scores on Axis 1 include weeds of cultivation and plants of fairly eutrophic open water and wetland sites, and the lowest scorers are all plants of heathland and much less eutrophic mires. This suggests an axis differentiating between tetrads with a range of habitats widespread in the lowlands and tetrads with a variety of heathland habitats much more characteristic of upland situations.

Axis 2 high scorers are plants from a wide range of open situations including some of the species characteristic of high scores on Axis 1. The low scorers on Axis 2 are all woodland plants. The suggestion is that the second strongest axis is associated with the presence or absence of shaded habitats.

**Table 9.** The highest and lowest scoring ten species with an overall frequency of at least 20% in each of the four strongest axes of a DECORANA ordination of the combined 1970-84 and 1985-2013 database

Axis 1	Axis 2	Axis 3	Axis 4
<b>HIGHEST SCORING 10 SPP</b>			
<i>Persicaria amphibia</i>	<i>Epilobium palustre</i>	<i>Centaurea erythraea</i>	<i>Conium maculatum</i>
<i>Ranunculus sceleratus</i>	<i>Lycopus europaeus</i>	<i>Dactylorhiza fuchsii</i>	<i>Petasites hybridus</i>
<i>Armoracia rusticana</i>	<i>Alisma plantago-aquatica</i>	<i>Tragopogon pratensis</i>	<i>Humulus lupulus</i>
<i>Silene latifolia</i>	<i>Ranunculus sceleratus</i>	<i>Convolvulus arvensis</i>	<i>Symphytum officinale</i>
<i>Convolvulus arvensis</i>	<i>Myosotis laxa</i>	<i>Verbascum thapsus</i>	<i>Viola odorata</i>
<i>Scrophularia auriculata</i>	<i>Persicaria amphibia</i>	<i>Symphytum officinale</i>	<i>Cruciata laevipes</i>
<i>Lycopus europaeus</i>	<i>Carex nigra</i>	<i>Linaria vulgaris</i>	<i>Fallopia convolvulus</i>
<i>Fallopia convolvulus</i>	<i>Persicaria lapathifolia</i>	<i>Carduus nutans</i>	<i>Convolvulus arvensis</i>
<i>Ligustrum vulgare</i>	<i>Senecio aquaticus</i>	<i>Primula veris</i>	<i>Ribes uva-crispa</i>
<i>Carduus nutans</i>	<i>Juncus acutiflorus</i>	<i>Sanicula europaea</i>	<i>Galanthus nivalis</i>
<b>LOWEST SCORING 10 SPP</b>			
<i>Deschampsia flexuosa</i>	<i>Sanicula europaea</i>	<i>Galanthus nivalis</i>	<i>Deschampsia flexuosa</i>
<i>Carex nigra</i>	<i>Taxus baccata</i>	<i>Carex remota</i>	<i>Persicaria amphibia</i>
<i>Epilobium palustre</i>	<i>Melica uniflora</i>	<i>Prunus avium</i>	<i>Carex hirta</i>
<i>Carex leporina</i>	<i>Veronica montana</i>	<i>Pinus sylvestris</i>	<i>Typha latifolia</i>
<i>Ulex gallii</i>	<i>Galium odoratum</i>	<i>Rumex sanguineus</i>	<i>Calluna vulgaris</i>
<i>Galium saxatile</i>	<i>Galanthus nivalis</i>	<i>Larix decidua</i>	<i>Juncus conglomeratus</i>
<i>Veronica officinalis</i>	<i>Viola odorata</i>	<i>Cerastium glomeratum</i>	<i>Carex nigra</i>
<i>Carex panicea</i>	<i>Asplenium scolopendrium</i>	<i>Rhododendron ponticum</i>	<i>Carex leporina</i>
<i>Calluna vulgaris</i>	<i>Mycelis muralis</i>	<i>Prunus domestica</i>	<i>Centaurea erythraea</i>
<i>Blechnum spicant</i>	<i>Euonymus europaeus</i>	<i>Epilobium ciliatum</i>	<i>Dactylorhiza fuchsii</i>

**Table 10.** Mean scores on the first four DECORANA ordination axes for tetrads from the 1970-84 survey and the 1985-2013 survey.

survey		Axis 1	Axis 2	Axis 3	Axis 4	No spp.
1970-1984	Mean	1.58	1.85	1.13	1.11	69.86
	SE	0.019	0.013	0.009	0.007	1.45
1985-2013	Mean	1.55	2.09	1.46	1.23	71.6
	SE	0.021	0.016	0.012	0.008	1.64

Axes 3 and 4 are more difficult to interpret, and several species prominent at the extremes of Axes 1 and 2 reappear, but in less clear relationships. It is of course possible that these less strong axes are concerned with less clearly ecological trends, such as differences between recorders, different balances in times of year when recording took place, etc. Axis 3 includes plants from a wide and similar range of lowland habitats at both ends, particularly if less extreme scoring species are taken into account. There is, however, an excess of introduced trees and other non-native plants at the low end of this axis, and all native plants and perhaps more semi-natural habitats at the high end. Possibly this axis contrasts more rural and more inhabited areas of the vice-county. Axis 4 is even more difficult to interpret, but much of its variance is associated with a very small number of tetrads.

Table 10 compares mean scores on each of the four ordination axes from the two surveys. There is a slightly higher score on Axis 1 in the earlier survey, but the standard errors of the means show that it is not a significant difference. There is a larger difference on Axis 2 and one which approaches statistical significance. This is also true of Axis 3, but not Axis 4.

These data suggest that there are some systematic differences between the 1970-84 and the 1985-2013 data sets and that these are associated with the second and third strongest trends in the data. Axis 2 appears to be a shade/open axis, and Table 10 implies either that there has been an increase in shaded habitats in Shropshire or that there has been a change in how shade habitats have been assessed. Table 10 also shows a difference on the less easily interpreted Axis 3, but the implication might be that there has been a decrease in gardenesque habitats in Shropshire or (more likely) a difference in the way they have been assessed. The strongest trend in the data, between tetrads characterised by heathland taxa and by a range of lowland habitats, has a very similar average score in the two surveys, implying a relative stability in this aspect of the dataset.

### TWINSPAN analysis

TWINSPAN (Hill 1979; Hill & Šmilauer 2005) is a computer program which can be used to compare the tetrads with one another on the basis of the taxa

recorded in each, and place them in groups, although it was originally designed to compare samples of vegetation much smaller than tetrads. TWINSPAN analyses the data using the computer program DECORANA. On this basis, it identifies the strongest numerical trend in differences within the complete set of samples and divides the samples into two groups at the average position on the trend. The division is refined by identifying ‘**preferential**’ species, which are at least twice as likely to be found in a sample on one side of the division, and re-ordinating using only these preferential species. This is the ordination which is the basis of finally allocating a sample to one side or the other. A further ordination is used to identify the most significant of the preferential species as ‘**indicator**’ species, which are usually most valuable at explaining the difference between the two groups. The preferential species, however, are also valuable for this purpose.

The two groups are then analysed separately in the same way and each divided similarly into two groups. The process is repeated further and the entire set of samples is thus divided into successively smaller groups which are internally more and more similar. The divisions are achieved mathematically but the results are generally open to ecological interpretation. For example, in the present study the samples are tetrads, and tetrads rich in wetland sites may be on one side of a division and tetrads with only dry sites on the other, since the species associated with wet and dry sites differ considerably.

In the TWINSPAN output, all the indicator species and those preferential species occurring in at least 20% of the samples are listed. Interpretation can be carried out by examining these lists of indicator and preferential species which are associated with each group and considering the ecological differentiation they represent.

Since the array of samples is divided into two groups only, there will often be what Hill calls a ‘zone of indifference’ at just the position where the division is made, where samples could be allocated to either group. This zone usually contracts greatly in the refined analysis, but borderline and initially misclassified samples are identified in the TWINSPAN output.

## Changes in the vascular plant flora of Shropshire

Clear divisions rarely occur in nature, particularly between tetrads which could individually contain examples of a large proportion of all the vegetation types in the vice-county, so some indicator and preferential species (and the ecological situations they represent) which characterise one group could be found in some tetrads on the other side in a division. Furthermore the differences are specific to a particular division. Thus, just because a species is characteristic of a group does not mean that it is entirely absent from the other group and a species which is an indicator or preferential for a particular group can reappear as an indicator or preferential species in a subsequent division of the other group.

TWINSPAN also conducts a subsequent comparison between species according to the samples in which they occur, and the classical output of TWINSPAN is a table which combines these two analyses. However, in view of the large size of the present analysis, we have concentrated on division of the tetrads and represent the groups which are formed in tree-like diagrams or **dendrograms**, showing the successive divisions and the indicator species associated with each division.

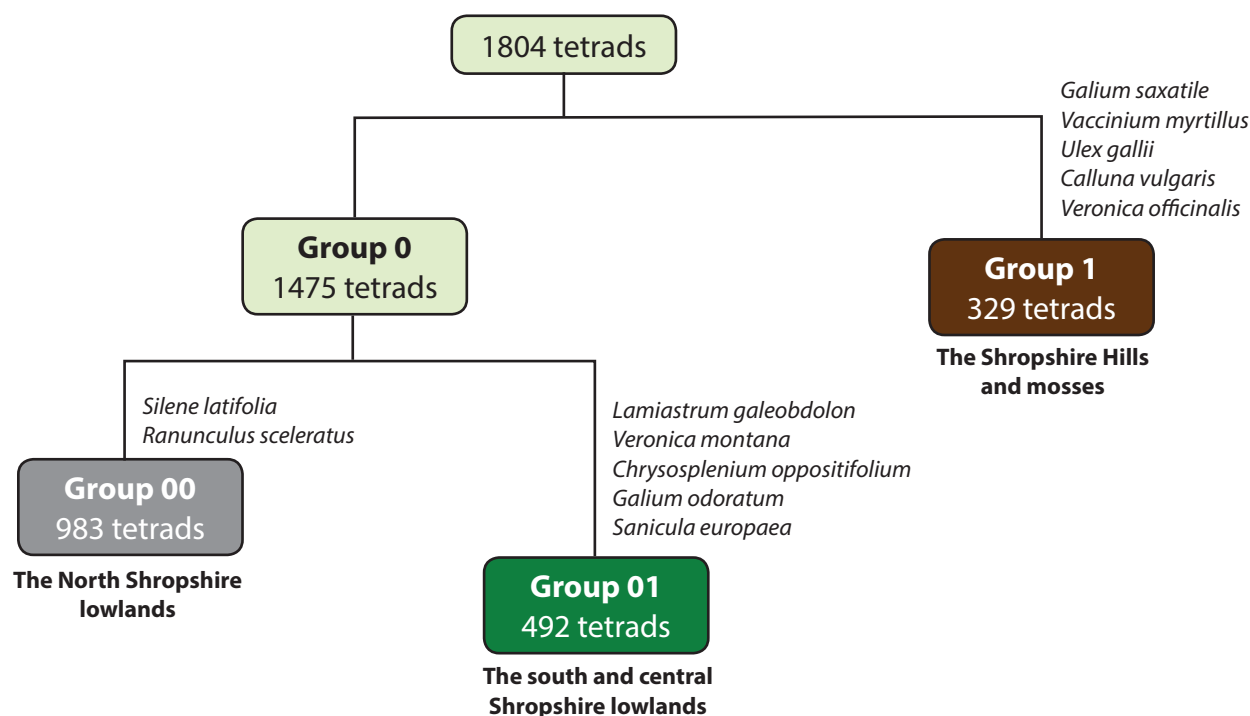
Ideally, comparisons should be made between samples completely equivalent in area, but the Shropshire data in many tetrads represent only a small part, the rest being in Montgomeryshire, Staffordshire etc. Tetrads represented by only a small number of species (fewer than 10 apart from the 'A' species) were therefore eliminated from the analysis.

The characteristics of the taxa used in interpreting the TWINSPAN output are set out in the main part of the present work based on the personal experience of the recorders in Shropshire, together with observations by Grime *et al.* (2007), Hill *et al.* (1999), Hill *et al.* (2004), Preston *et al.* (2002a) and Sinker *et al.* (1985).

Factors causing apparent deleterious change between the two surveys, in terms of negative changes in the frequency of indicator and preferential species, will include agricultural improvement, poor conservation management, and also negative change in survey intensity. Factors causing apparent positive change, in terms of positive changes in frequency of indicator and preferential species, will include agricultural de-intensification (e.g. successful implementation of a Higher Level Stewardship or Conservation Agreement scheme), direct or indirect positive influences of Natural England, the National Trust and the Shropshire Wildlife Trust on the management of sites they own, and also positive change in survey intensity. Variation in intensity of recording from place to place, and differences in these variations between the two surveys, will potentially produce spurious differences in the analysis.

### The primary divisions

Figure 2 shows the initial divisions in a TWINSPAN analysis of the comparable and sufficiently species-rich 1,804 tetrads from the 1970-84 and 1985-2013 surveys as defined above. In the first division the 1,804 tetrads are unevenly divided to give Group 0, consisting of 1,475 tetrads, and Group 1, consisting of 329 tetrads.



**Figure 2.** The primary divisions of a TWINSPAN analysis of tetrads common to the 1970-84 and 1985-2013 surveys in Shropshire (tetrads with fewer than 10 non-A species omitted)  
Species shown are indicators for the relevant side of a division. The three end groups are coloured.



A total of 282 tetrads are characterised as borderline or initially misclassified in this division. The indicator species are all associated with Group 1 and are shown in the diagram as a species list adjacent to the Group 1 box. They are all species characteristic of heathland, particularly dry heathland, and three of the five (*Vaccinium myrtillus*, *Calluna vulgaris* and *Veronica officinalis*) are axiophytes. Including these five species, there are 68 species preferential for Group 1 and these strengthen the association of the group with heathland, but extend the range of habitats found preferentially in Group 1 tetrads to include wet heath, nutrient-poor and at least moderately base-poor mires and beyond. Of the preferential species (including the three which are indicators) 58 are axiophytes, suggesting that the type of tetrad referred to in Group 1 is likely to be rich in species with nature conservation value. A complete list of preferential species for Group 1 is given in Appendix 1.

The much larger Group 0 has no indicators and only 17 (but often very strong) negative preferentials. These are plants of several habitats: lowland water margins (*Alisma plantago-aquatica*, *Lycopus europaeus*, *Scrophularia auriculata*, *Ranunculus sceleratus*, *Salix viminalis*), waysides (*Barbarea vulgaris*, *Bryonia dioica*, *Knautia arvensis*, *Ligustrum vulgare*, *Silene latifolia*, *Ulmus procera*) and cultivation (*Armoracia rusticana*, *Convolvulus arvensis*, *Fallopia convolvulus*, *Papaver dubium*, *Reseda luteola*, *Urtica urens*). The solitary axiophyte *Elymus caninus* is also probably here as part of the wayside facies, although river banks are another habitat. The first division therefore distinguishes a group of tetrads which contain a good range of heathland and associated habitats and in which many lowland habitats are rare, from a much larger group in which heathland is rare and typical lowland habitats are much more plentiful. This is clearly Axis 1 in the DECORANA analysis described above in Table 9.

Figure 2 shows a further division of the larger Group 0 to give Group 00, with 983 tetrads, and Group 01 with 492 tetrads. One hundred and sixty two tetrads are

characterised as borderline or initially misclassified in this division. The smaller Group 01 has five of the seven indicator species; these are all axiophytes and species largely confined to old woodland, suggesting that Group 01 tetrads typically contain choice woodland habitats. The 39 preferentials for Group 01 include further old woodland species and also species of other (mostly semi-natural) habitats and, all together, 30 axiophytes. The complete list of preferentials for Group 01 is given in Appendix 2. The trend on which this division is based is clearly Axis 2 in the DECORANA analysis described above in Table 9. It is quite encouraging to note that more than a quarter of the 1,804 Shropshire tetrads are included in this group of tetrads characterised by the survival of these old habitats.

The larger Group 00 has *Silene latifolia* and *Ranunculus sceleratus* as indicators. *Silene latifolia* is a predominantly lowland species (replaced by *S. dioica* in shadier, higher and less intensively disturbed habitats). The distribution of *S. latifolia* is concentrated in the more densely populated areas of Shropshire in MG1 *Arrhenatherum elatius* grassland, particularly in road banks and verges and in more disturbed situations. *Ranunculus sceleratus* characterises the fairly open OV32 community occurring on organic mud by pools, canals etc. and tolerates high nutrient status. It is a common plant (317 tetrads in the 1970-84 survey, but only 204 in the 1985-2013 survey), particularly and specifically in the Shropshire plain and especially along the Severn and its tributaries. The preferentials for Group 00 are mainly water margin plants (e.g. *Glyceria maxima*, *Persicaria amphibia*, *Stachys palustris*) and ruderals (e.g. *Anchusa arvensis*, *Carduus nutans*). Of these only *Stachys palustris* is a Shropshire axiophyte. Group 00 could therefore be characterised as representing lowland farming and wetland areas, but it is essentially those tetrads left when those characterised by the presence of heathland plants (Group 1) and those characterised by the presence of old woodland plants (Group 01) have been removed.

**Table 11.** Numbers of tetrads in each of the three main Twinspan groups. Tetrads only included in the analysis from one of the two surveys have been removed.

TWINSPAN groups	Tetrads from the Sinkers <i>et al.</i> survey 1970-1983	Tetrads from the Lockton & Whild survey 1985-2013	Total number of tetrads
Group 00 farmland/wetland oriented)	492	456	948
Group 01 (old woodland-oriented)	217	258	475
Group 1 (heathland-oriented)	165	160	325
Total	874	874	1748

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The TWINSPAN analysis has separated 329 heathland-oriented tetrads from 492 old woodland-oriented tetrads and 983 tetrads with neither of these orientations. When tetrads with low numbers of records were removed, 56 tetrads were included in the comparison from only one of the surveys. Table 11 shows the balance between the three TWINSPAN groups in the remaining 1,748 tetrads, where it is possible to compare directly the allocation of the same tetrad in both surveys.

Group 00 is 36 tetrads (7.3%) smaller in the 1985-2013 survey than in the earlier 1970-84 survey. Group 1 (heathland-oriented) is also slightly smaller in the 1985-2013 survey. These changes must involve mainly transfers to the old woodland group (Group 01) since that group is apparently increasing. Since it seems very unlikely that there has been significant increase in the distribution of the ancient woodland species which largely characterise the old woodland group, the change probably partly reflects a more thorough coverage of the ground in the later survey, particularly in terms of spring surveys which are necessary to identify many old woodland species which disappear by June. The longer time period of the second survey would also probably make more comprehensive survey more likely.

The three TWINSPAN groups described above have been mapped in Figure 3. This figure consists of two maps of Shropshire, the one to the left showing the distribution of the tetrad records from the 1985-2013 survey and the one to the right showing the characteristics of the tetrads in the earlier 1970-84 survey.

Figure 3 shows that most of those tetrads which have not been included in the analysis are fragments in the periphery of Shropshire. There do, however, appear to be some thinly recorded areas, especially in the north east, which is anyway relatively intensively farmed and probably less rich in vascular plant species than elsewhere. SJ63 seems to be quite thinly recorded in both surveys. The blank area in SO57 in the earlier survey is unfortunate since it marks a boundary of the heathland-oriented (Group 1) area of Titterstone Cleve Hill.

Figure 3 also has clear ecological implications, limited to some extent by the large number of borderline and initially misclassified tetrads revealed in the divisions. Firstly, the two maps are sufficiently similar to suggest that the analysis is discriminating between actual Shropshire ecological landscape types and not just between the two surveys. Furthermore, the two strongest trends differentiating between tetrads in Shropshire have a significant geographical basis. The heathland-oriented Group 1 describes the high land of the south and west which is still dominated by moorland and which forms coherent blocks that

continue to have a significant and demonstrable heathland flora. With the exception of the North Shropshire Mosses and a few, relatively small, elevated areas such as the Wrekin/Ercall area which are classified with Group 1, the two other major landscape types in Shropshire together account for essentially the whole of lowland Shropshire. Figure 3 shows that the old woodland-oriented Group 01 describes lowland Shropshire south and west of the River Severn (plus the Wrekin/Ercall area just north of the Severn) together with much of the Montgomeryshire border country north of the Severn. The farmland/wetland-oriented Group 00 essentially describes the lowland Shropshire plain north and east of the Severn.

The third major implication of Figure 3 is that there have been some changes between the two surveys, which are summarised below.

### Change in the heathland-oriented tetrads group (Group 1) – the Shropshire Hills

Starting in the north west and moving anti-clockwise, Group 1 represents the eastern fringes of the Berwyn west of Oswestry, small areas in the Breiddens and around Welshpool, a large area comprising the Long Mynd and Stiperstones, another equally large area comprising the Clun Forest, small elevated areas north and west of Ludlow, the Brown Clee, the Titterstone Clee and the Wyre Forest. The last is of course much lower, largely wooded (with considerable areas of conifer plantation but also acid Oak-Birch woodland) and its heathland orientation is presumably determined geologically rather than topographically. There is a scattering of single or small groups of tetrads across the east which have specific determinants, e.g. the elevated Wrekin/Ercall and Haughmond Hill complexes and small heaths in the Whitchurch area. In the earlier survey even the gigantic Fenn's and Whixall Moss only places a single tetrad in Group 1 (SJ43Y). There are of course several more tetrads over the border which would extend this heath-characterised area considerably.

In terms of the changes between the two surveys, in the north east a wider area of the Wrekin/Ercall complex has been included in the heathland group in the later survey, possibly as the Ercall has recovered from fire in the 1970s, although there is also rich heathland on coal spoil in this area which may have become better known since 1984. Different squares are marked in the Haughmond Hill area probably also reflecting ecological succession after fire in 1976. South of Whitchurch, Steel Heath, rather than the tiny area of heath at Brown Moss, has been included in the later survey. Also SJ43S is added in the later survey, possibly as the result of habitat management and/or more intensive survey.

There are some apparent changes in pattern, but no clear change in frequency, of heathland-oriented tetrads west of Oswestry and around Welshpool. The Stiperstones/Long Mynd complex has likewise been largely maintained as a coherent heathland complex, although there may be a small loss of heathland-characterised tetrads in the gap between Stiperstones and Long Mynd in SO39. It should also be noted that Corndon Hill in Montgomeryshire (and therefore absent from Figure 3) forms a heathland link between Stiperstones/Long Mynd and the Clun Forest complex, although the River Camlad valley gives some separation. The core of tetrads without recorded heathland within the Clun Forest, centred on the Clun and Kemp river valleys mainly in SO38, appears to have expanded, possibly as the result of agricultural change. Its partial replacement with tetrads of the old woodland-oriented group (Group 01) may reflect the survival of unaltered dingle woodlands after agricultural improvement elsewhere.

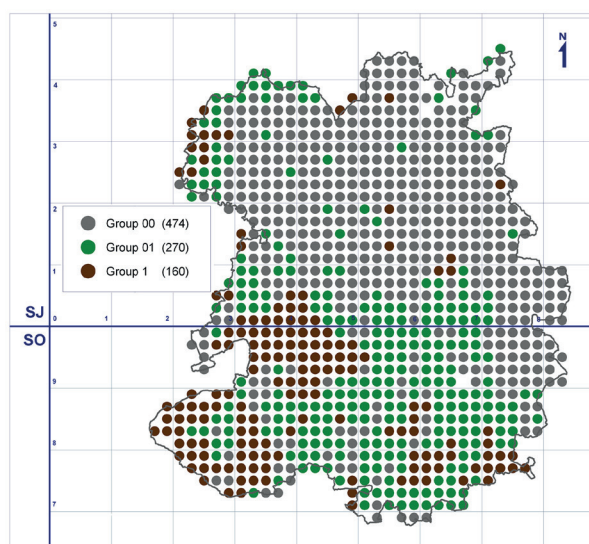
### Changes in the old woodland-oriented group (Group 01) - the South Shropshire Lowlands and the Montgomeryshire border

Figure 3 shows that the vast majority of the more lowland tetrads south and west of the Severn and in the north-west fringe of Shropshire are still widely and continuously characterised by the possession of old and indeed ancient woodland. The maps even imply that this kind of tetrad is expanding in south Shropshire, with, for example, the farmland/wetland-oriented (Group 00) area in the Corve Valley becoming apparently more constricted. Also a wider scatter of old

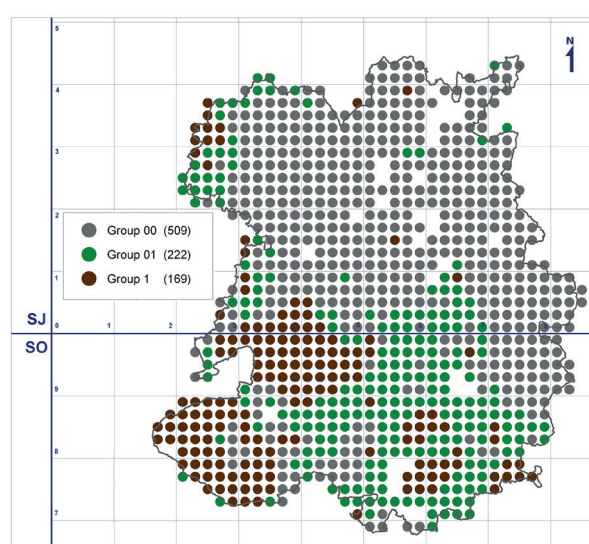
woodland-oriented tetrads seems to have appeared throughout North Shropshire, particularly in SJ33 and SJ43 in north-west Shropshire. As is remarked above it is very unlikely that there has been a significant expansion of ancient woodlands, and the change probably more reflects the fact that the area is becoming better known botanically. The major well-wooded area north and east of the Severn is centred on Telford and the Wrekin in SJ60, and these areas also appear to be expanding; probably this is again the result of more comprehensive survey but it is just possible that habitat creation and management associated with the development of the new town has actually positively affected the extent and continuity (at tetrad level) of species-rich woodland.

### Changes in the farmland/wetland-oriented group (Group 00) – the North Shropshire Plain

Figure 3 shows that tetrads without significant heathland and old woodland species, and characterised by various combinations of plant species, associated with arable farmland and wetland, continue to dominate Shropshire north and east of the Severn. Occasional, mostly scattered tetrads, mostly in the river valleys of south Shropshire, also fall into this category. There has been a reduction of 36 tetrads in this category (Table 11) between the two surveys, mainly as a scatter of tetrads throughout Shropshire. As is explained above this is largely explained by increases in old woodland-oriented tetrads (Group 01) and probably represents the discovery of an ancient woodland element in the flora of hedges or small



Lockton & Whild



Sinker *et al.*

**Figure 3.** The Shropshire tetrads showing the distribution of the three main TWINSpan groups in the survey for Sinker *et al.* and for Lockton & Whild. All 'A' species as defined in Sinker *et al.* and all tetrads not included in both surveys or represented by fewer than 10 species after elimination of the 'A' species have been omitted from the analysis.



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woods not recorded in the spring in the earlier survey. The farmland/wetland-oriented group (Group 00) includes the meres of North Shropshire and is by no means devoid of botanical interest; this has been examined in further TWINSpan divisions.

Further divisions of each of the three major tetrad types identified above are examined separately below.

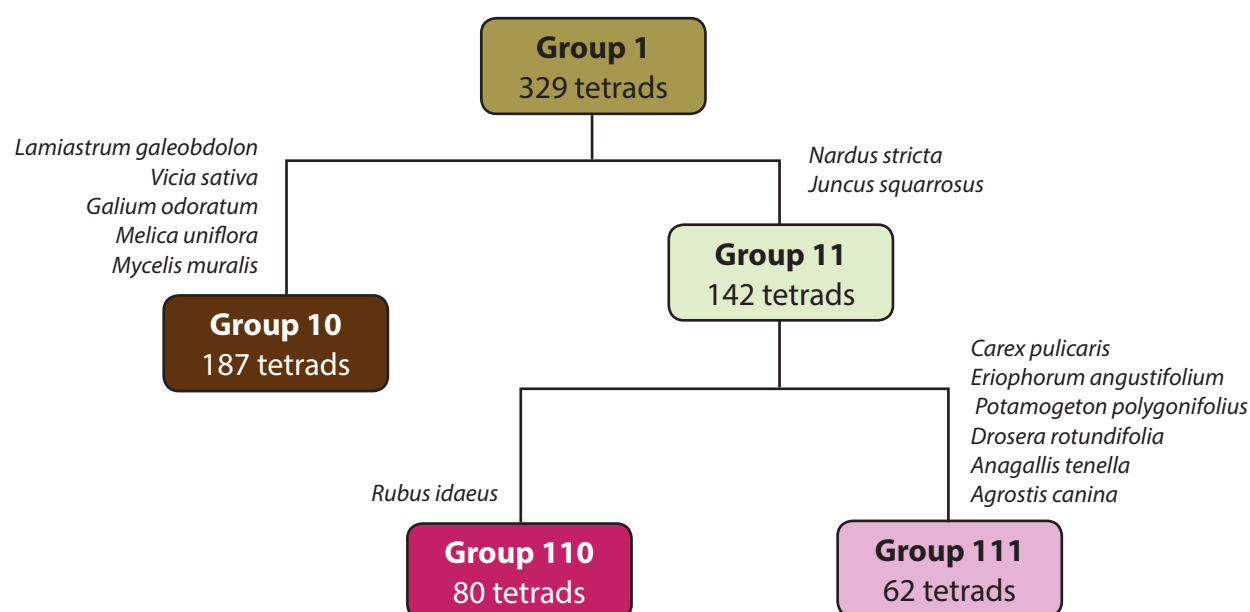
### Division of the heathland-oriented tetrads (Group 1)

Figure 4 shows the 329 heathland-oriented tetrads split into Group 10 (187 tetrads) and Group 11 (142 tetrads) in the TWINSpan analysis. There is a total of 71 borderline and initially misclassified tetrads in this division. There are five indicators for Group 10, including two which are also indicators for the old woodland-oriented group (01) and are old woodland axiophytes, to which is added the similar *Melica uniflora*, the shade plant *Mycelis muralis* and the common ruderal species complex *Vicia sativa*. These references to the old woodland-oriented group (and in the case of *Vicia sativa* to the farmland/wetland-oriented group) suggest that this section of the heathland-oriented group represents transitions towards the other groups. In addition to possessing substantial numbers of heathland species the tetrads of Group 10 must also include other habitats, notably old woodlands and disturbed or cultivated habitats. In many cases these will be tetrads which have both upland and lowland parts. The 64 preferentials include 23 axiophytes, mostly old woodland species. Together

with the heathland axiophytes, which characterise Group 1 as a whole, this suggests that the typical Group 10 is rich in conservation habitats, but the preferentials also include plants such as *Epilobium ciliatum*, *Galanthus nivalis*, *Pentaglottis sempervirens* and *Viola arvensis*, suggestive of more occupied and farmed habitats. In contrast Group 11 tetrads lack or have poorly developed examples of these habitats and are more uniformly heathy. The indicators for Group 11 support this interpretation and also an increase in wet habitats: all but one (*Potamogeton natans*) of the 17 preferentials for Group 11 are axiophytes of wet heaths, such as *Erica tetralix* and *Eriophorum angustifolium*, or (in the upland context) more flushed areas, such as *Potamogeton polygonifolius* and *Triglochin palustris*.

Group 11, which might be entitled the 'rich moorland tetrads' group, has been divided again in Figure 4. There are 15 borderline and 14 initially misclassified tetrads in this division. The single indicator for Group 110 is *Rubus idaeus*, not a familiar member of heathland communities and often an introduction from cultivation. Its appearance in the division of the damper side of the heathland-oriented group is interesting. The 10 preferential species for Group 110 are mostly ruderals or otherwise associated with habitations or lowland habitats; the only axiophyte is *Galeopsis speciosa*, a plant only frequent in arable and waste on acid soils. The indicators for Group 111 are moorland flush species, as are most of the 36 preferential species, together with further dry heath species. Of the preferentials for Group 111, 31 are Shropshire axiophytes.

**Figure 4.** Shropshire Hills and Mosses. Major divisions of Group 1 in a TWINSpan analysis of tetrads common to the 1970-84 and 1985-2013 surveys in Shropshire (tetrads with fewer than 10 non-'A' species omitted). Species shown are indicators for the relevant side of a division. Group 1 and the three end groups are coloured.



**Table 12.** Numbers of tetrads in the three TWINSpan endgroups within Group 1 (four tetrads not matched in the original comparison have been removed).

	<b>Tetrads from the Lockton &amp; Whild survey 1985-2013</b>	<b>Tetrads from the Sinker <i>et al.</i> survey 1970-1984</b>	<b>Total number of tetrads</b>
<b>Group 10 ( moorland transitional with lowland)</b>	85	101	186
<b>Group 110 (intermediate with Group 10)</b>	33	44	77
<b>Group 111 (choice moorland)</b>	42	20	62
<b>Total</b>	160	165	325

It would appear that Group 110 represents an intermediate with Group 10 and Group 111, the latter representing the most choice moorland tetrads with the least lowland or human occupation influence.

Four of the tetrads in Group 1 were not matched in the original comparison and therefore need to be removed from consideration if change is to be assessed in terms of numbers of tetrads in the three groups. Three of these tetrads are in Group 110 (SO18S, SO28E and SO28P) and should be subtracted from the total for this group since they were only included in the 1970-84 analysis. The resultant balance between the three groups is shown in Table 12. The numbers in the two surveys are still unequal because Group 1 as a whole has lost five tetrads between the two surveys.

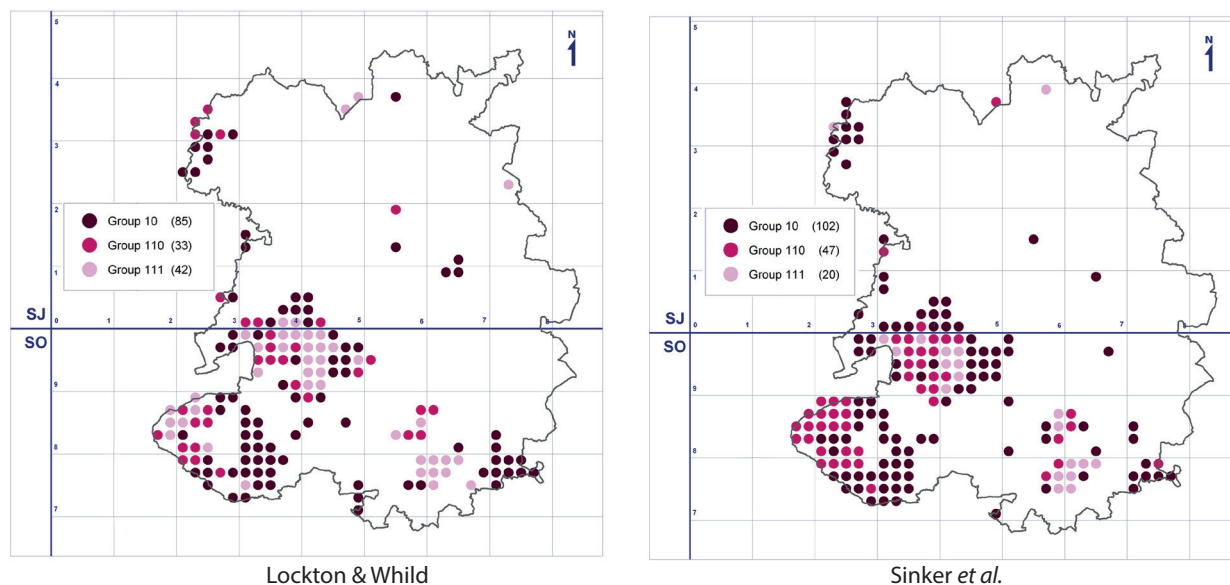
The small overall reduction of five tetrads in Group 1 between the two surveys is seen to involve a decrease in Group 10 of 16. Clearly some Group 10 tetrads have passed out of Group 1 altogether, possibly by agricultural improvement, but also there has also possibly been a reduction in non-heathland influence in some tetrads. One possible explanation is that the later survey recorders focused more on the heathland flora in these tetrads and did not record the non-heathland vegetation as well as in the earlier survey. Alternatively, the increase may also be partly caused by more conservation-oriented and less intensive moorland grazing in more recent years, which has revealed more diversity in existing moorland, particularly in the flushes. Also, the more exclusively axiophyte-rich Group 111 increases in proportion in the 1985-2013 survey, and Group 110, which shows some presence of lowland species, decreases. It is thus not likely that these changes can be explained entirely by the transfer of tetrads from Group 10 to Group 110. Taken together these features suggest that better management of high moorland may be a factor in the changes, but it also strengthens the impression that tetrads with pre-existing non-heathland vegetation may still be being lost from Group 1 by agricultural improvement of heathland.

Figure 5 shows the distribution of the three heathland end groups in the two surveys. In north east Shropshire SJ72G (Puleston Common), first shown as a heathland tetrad in the 1985-2013 survey, is here revealed as including choice moorland flush species. The relevant wet heath and moorland flush species in SJ53U (Brown Moss) which made this a member of Group 111 in the 1970-84 survey have clearly been degraded to the extent that this tetrad is no longer part of Group 1. On the other hand the single Whixall Moss tetrad (SJ43Y) in the 1970-84 survey appears to have increased in nature conservation value, and Wem Moss (SJ43S) has been added to the same group.

The heathland cluster west of Oswestry is shown as mainly the transitional Group 10 in the 1970-84 survey, with a single Group 111 tetrad (SJ23G). Since some of the tetrads in this cluster straddle the border, there may be differences in the areas surveyed in the two surveys, but nevertheless there does seem to be an increase in wet heath, (i.e. from Group 10 to Group 110), presumably a reflection of more intensive recording.

In the Stiperstones/Long Mynd heathland area, some Group 10 tetrads in the east have moved into 11 and some from 110 to 111, implying improvement in conservation terms, probably as a result in conservation management of the Long Mynd and Stiperstones by Natural England and the National Trust, although there has also been increased survey effort since 1985.

There are some similar changes in the western part of Clun Forest, and at least one change from 10 to 11, implying more intensive recording, but also possibly a response to better management of this Environmentally Sensitive Area. This is also a better-known area nowadays. It is, however, difficult to ignore the overall losses in Group 1 tetrads in this area, although a few tetrads on the border may have been recorded in a more restricted area since the vice-county border was adhered to by Lockton & Whild but not in the 1970-84 survey.



**Figure 5.** The distribution of three main TWINSpan endgroups within the heathland-oriented Group 1 in the survey for Lockton & Whild and for Sinker *et al.* All 'A' species as defined in Sinker *et al.* 1985 have been omitted from the analysis and all tetrads not included in both surveys or represented by fewer than 10 species after elimination of the 'A' species have also been omitted.

Brown Clee and Titterstone Clee are also possibly showing a few richer tetrads in the 1985-2013 survey. A rich tetrad (SO67S) is revealed south of Cleobury Mortimer in the 1985-2013 survey.

## Divisions of Group 01 (the old woodland-oriented tetrads)

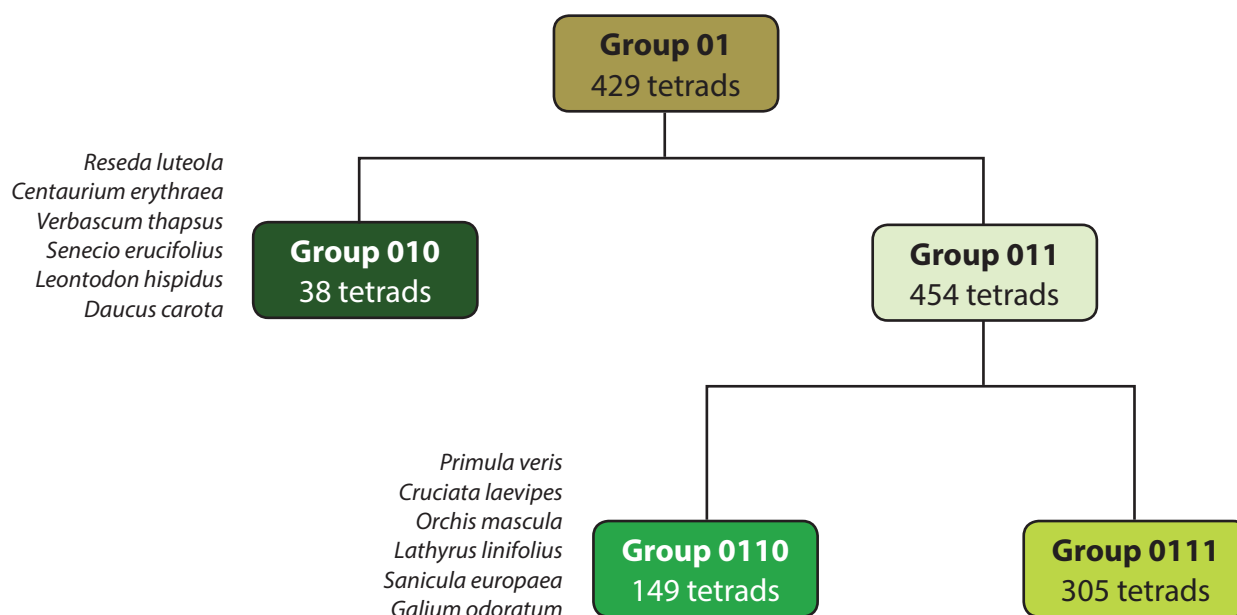
Figure 6 shows some principal divisions of Group 01. The five indicators for the small Group 010 are a fairly nondescript group of quite common non-woodland species; only *Senecio erucifolius* is an axiophyte and it is a plant typical of shallow skeletal soils or bare patches on limestone, but it also occurs on other base-rich soils and, rarely, on fen. The other species mostly occur on shallow base-rich soils, although *Reseda luteola* will also grow in sites rendered bare by disturbance. The implication is that these tetrads typically have the old woodland species but also non-wooded areas with open vegetation on shallow, base-rich soils. The numbers of preferential species associated with these 38 tetrads are however quite startling: 259, including 85 axiophytes. Many, such as *Anacamptis pyramidalis*, *Avenula pubescens*, *Blackstonia perfoliata*, *Briza media*, *Bromopsis erecta*, *Centaurea scabiosa*, *Erigeron acris*, *Gentianella amarella*, *Hypericum montanum* and *Origanum vulgare* are calcicoles and plants associated with limestone in Shropshire, but others, such as *Butomus umbellatus*, *Cardamine amara*, *Carex strigosa*, *Euphorbia amygdaloides*, *Genista tinctoria*, *Hypericum pulchrum*, *Ophioglossum vulgatum*, *Pimpinella saxifraga*, *Valeriana dioica* and even *Calluna vulgaris*

and *Vaccinium myrtillus* are associated with a wide range of valuable habitats. This suggests that this group, although an extreme group within the old woodland-oriented tetrads, represents general habitat-richness. There are 53 borderline tetrads and six initially misclassified tetrads in this division, suggesting that the 38 tetrads which form the group have many intermediates with the rest of Group 01.

The remaining 454 tetrads have no indicators or even preferentials, but the non-preferentials include sufficient of such species as *Adoxa moschatellina*, *Betonica officinalis*, *Bromopsis ramosa*, *Galium odoratum*, *Lamium galeobdolon*, *Luzula sylvatica*, *Melica uniflora*, *Sanicula europaea* and *Veronica montana* to suggest many rich habitats will be included in Group 011.

When Group 011 is divided (Figure 6), the six indicator species are associated with the smaller Group 0110 and with rich woodland and quality woodland margin and grassland habitats. There are also 59 preferential species of which 31 are axiophytes, again not exclusively of woodland habitats. The only preferentials for Group 0111 are the ruderal neophyte *Epilobium ciliatum* and the woodland plant *Myosotis sylvatica* which is often a garden escape. The implication is that Group 0110 includes the tetrads with richer and less disturbed habitats, although there are 16 axiophytes, nearly all old woodland indicators, among the non-preferential species, suggesting that Group 0111 tetrads will still include old and





**Figure 6.** South and Central Shropshire lowlands. Major divisions of Group 01 in a TWINSPLAN analysis of tetrads common to the 1970-84 and 1985-2013 surveys in Shropshire (tetrads with fewer than 10 non-'A' species omitted). Species shown are indicators for the relevant side of a division. Group 01 and the three end groups are coloured.

significant woodland. There are 70 borderline and 59 initially misclassified tetrads in this division.

In summary, the analysis seems to have divided the old woodland-oriented tetrads into an extremely habitat- and species-rich Group 010, an intermediate Group 0110 and a least habitat- and species-rich Group 0111, which also shows signs of disturbance and increased human influence. There are however quite large numbers of borderline tetrads in these divisions.

After 17 non-paired tetrads have been removed, 475 tetrads remain. The balance between the TWINSPLAN groups in the 1970-84 and 1985-2013 tetrads belonging to this group is shown in Table 13.

As is discussed above, there are more of the old woodland-oriented tetrads of Group 01 in the 1985-2013 survey than in the earlier 1970-84 survey. The simplest explanation of the trends in Table 13 is that there has been a considerable loss of quality between the two surveys. The two richer groups,

Group 010 and 0110, together appear to be much scarcer in the 1985-2013 survey. There are similar numbers of tetrads in the richest group 010, but Group 0110, representing the next richest group of tetrads, has been reduced from 120 tetrads to 27. The least diverse Group 0111 is much commoner in the 1985-2013 survey.

There are two plausible explanations for these changes: the 1985-2013 survey may be much less complete, or there may have been significant deterioration in the diversity of the Group 01 tetrads. Since the 1985-2013 survey has led to an overall increase in the number of old-woodland oriented tetrads the later survey seems to be more complete and it is difficult to explain these changes in terms other than deterioration in quality.

In Figure 7 the distribution of the end groups within Group 01 in the two surveys is shown. In both surveys Group 010 is not unexpectedly associated with the Carboniferous Limestone of the Llanymynech area and the Silurian Limestone of Wenlock Edge, and there are

**Table 13.** Numbers of tetrads in the three TWINSPLAN endgroups within Group 01 (17 tetrads not matched in the original comparison have been removed).

	Tetrads from the Lockton & Whild survey 1985-2013	Tetrads from the Sinker <i>et al.</i> survey 1970-1983	Total number of tetrads
<b>Group 010</b>	16	22	38
<b>Group 0110</b>	27	120	147
<b>Group 0111</b>	215	75	290
<b>Totals</b>	258	217	475

## Changes in the vascular plant flora of Shropshire

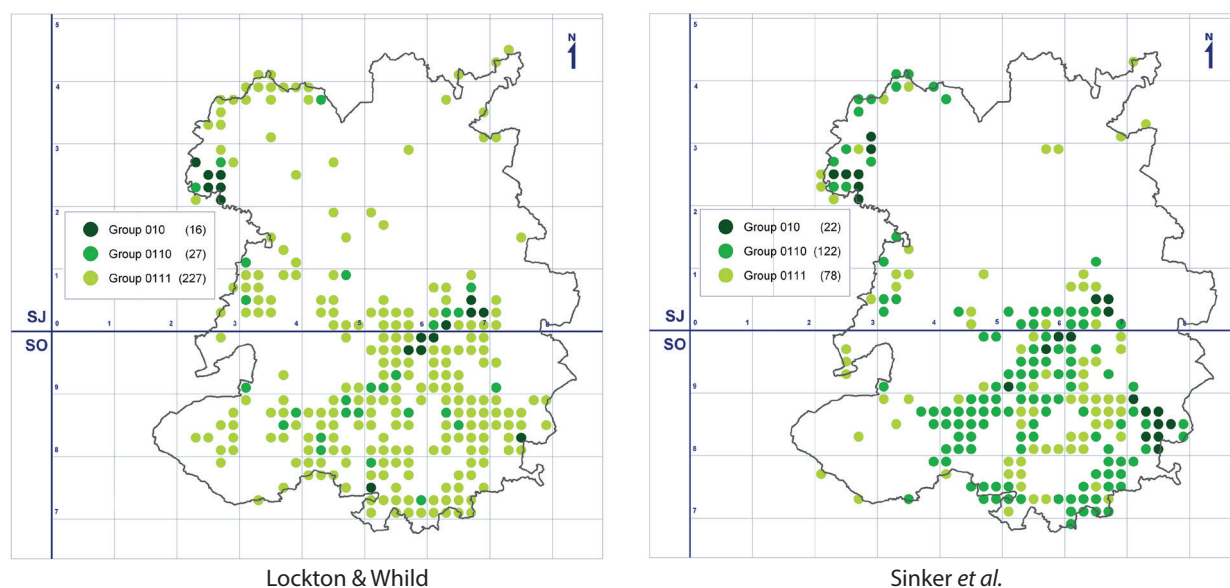
even some signs of small increases in numbers of these tetrads, possibly as a result of even more thorough survey (these areas have always been well surveyed but some of the limestone quarry areas of Wenlock Edge have become less worked and more open to survey in recent years) or, even, as a result of improved nature conservation management. One tetrad (SJ22H) which includes both limestone and heathland habitats has become part of Group 1. However in the 1970-84 survey there is also a cluster of Group 010 tetrads in the lower Severn valley between Bridgnorth and the Wyre Forest which has almost disappeared in the 1985-2013 survey and has largely become part of the much less diverse Group 0111. This area was particularly well surveyed for the 1985 Flora, which may have exacerbated this change.

However the most profound change between the two maps is the near elimination of Group 0110 in the 1985-2013 survey. This type was widespread in South Shropshire in the 1970-84 survey throughout Wenlock Edge and in the hinterland of the Cleve Hills. It now seems to have been largely replaced by Group 0111, still showing ancient woodland affinities but with a more restricted flora and more signs of disturbance. It seems unlikely that a reduction in survey intensity could have taken place to such a degree as to completely explain this change, especially since other indications suggest an increase in survey intensity.

If the indicator and preferential species associated with this division are examined there are only two preferentials for the increasing Group 0111. These are *Epilobium*

*ciliatum* and *Myosotis sylvatica*. Both of these species show profound increases in the 1985-2013 survey, *Epilobium ciliatum* probably largely because of a genuine increase in this expanding neophyte. *Myosotis sylvatica* was little recorded in the 1970-84 survey, although it had records in almost all tetrads of SO78, suggesting that most recorders avoided recording it as a plant typically on the edge of naturalisation. Together the apparent great increase in these two species would have had a strong influence on the ordination axis which separated Groups 0110 and 0111.

Nevertheless, all the indicator species and no less than a further 53 taxa are preferential for the smaller Group 0110. They are not predominantly woodland species: most of the woodland axiophytes preferential for Group 01 as a whole are non-preferential in this division; any deterioration has not profoundly affected the survival of ancient woodlands in south Shropshire. On the other hand, a long list of species declining in Shropshire is preferential for Group 0110. These include the woodland species *Sanicula europaea* and *Galium odoratum*, whose losses are concentrated in the southern lowland, but also grassland plants such as *Primula veris*, *Cruciata laevipes*, *Polygala vulgaris*, *Knautia arvensis*, *Genista tinctoria* and *Clinopodium vulgare*, all of which show strong or gentle declines in the south Shropshire lowlands in the species distribution maps. There are also a few heathland species, such as *Deschampsia flexuosa* and *Luzula multiflora*, and wetland species, such as *Achillea ptarmica* and *Eupatorium cannabinum*, in the preferential and also a few weeds. A complete list is given as Appendix 4.



**Figure 7.** The Shropshire tetrads showing the distribution of three main TWINSpan endgroups within the woodland-oriented Group 01 in the survey for Lockton & Whild (1985-2013) and for Sinkers *et al.* (1970-83). All 'A' species as defined in Sinkers *et al.* 1985 have been omitted from the analysis and all tetrads not included in both surveys or represented by fewer than 10 species after elimination of the 'A' species.

The implication is that botanical and general habitat diversity as a whole is declining in the south Shropshire lowlands, and if nothing else Appendix 4 gives an idea of the range of changes taking place.

### Divisions of Group 00 (the wetland/farmland oriented tetrads)

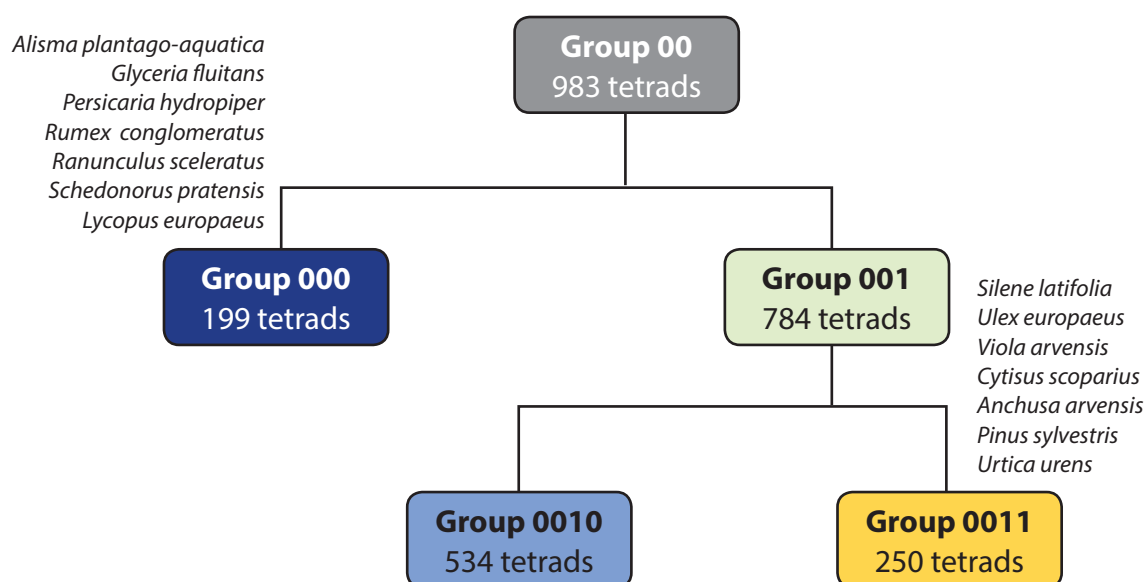
TWINSPAN divisions of the group have been used to generate three endgroups which are shown in Figure 8. First, Group 000 comprising 199 tetrads is cut off. The seven indicators are all associated with this group. They are associated with a range of fairly or even very eutrophic water-oriented situations, from damp meadows (*Rumex conglomeratus*, *Persicaria hydropiper*, *Schedonorus pratensis*) to water margins (*Alisma plantago-aquatica*, *Glyceria fluitans*, *Lycopus europaeus*, *Ranunculus sceleratus*). The 91 preferentials consolidate this impression considerably, extend the habitat range to damp semi-shade and include 24 mostly wetland axiophytes. Examples of preferentials include *Carex pseudocyperus*, *Comarum palustre*, *Hottonia palustris*, *Oenanthe aquatica*, *Phragmites australis*, and *Stachys palustris*.

There are no indicators or even preferentials for the much larger Group 001 and the list of non-preferential species suggests that the characteristic landscape of Group 001 tetrads is dominated by hedgerows, agriculture and human settlements, and that much of the botanical interest associated with open water and wetland is segregated into Group 000. *Adoxa moschatellina*, *Deschampsia flexuosa* and *Lamium*

*galeobdolon* are non-preferential axiophytes. The impression given is that Group 000 includes the choicer habitats of Group 00 and that these are at least modestly eutrophic wetlands and water bodies. This division appears to involve a considerable overlap: there are 100 borderline and 62 initially misclassified tetrads in this division.

In Figure 8 the 784 tetrads of Group 001 are divided again, with indicators all associated with the smaller Group 0011, and continuing the impression of a settled agricultural landscape, but suggesting rather drier situations, with a fairly long list of 47 mostly common preferentials but with one or two such as *Deschampsia flexuosa* and *Vulpia bromoides* suggesting some quite droughty situations. The much larger Group 0010 has no indicators and only a single preferential, *Oenanthe crocata*, a plant of ditches and canal sides, suggesting that the bulk of Group 001 tetrads belongs to the more abundant parts of the landscape, which generally includes damper situations, probably intergrading with Group 000. There is a large borderline area here – there are 244 borderline and initially misclassified tetrads in the division.

Table 14 shows the number of tetrads in each of these three groups within Group 00 after 35 tetrads which were not matched in the comparison have been removed. The less rich Group 0010, but not the drier Group 0011, appears to increase in number in the 1985-2013 survey compared with the 1970-84 survey, and the richer group appears to decrease sharply.



**Figure 8.** North Shropshire. Major divisions of Group 00 in a TWINSPAN analysis of tetrads common to the 1970-84 and 1985-2013 surveys in Shropshire (tetrads with fewer than 10 non-'A' species omitted). Species shown are indicators for the relevant side of a division. The three end groups are coloured.



**Table 14.** Numbers of tetrads in the three TWINSpan endgroups within Group 00 (35 tetrads not matched in the original comparison have been removed).

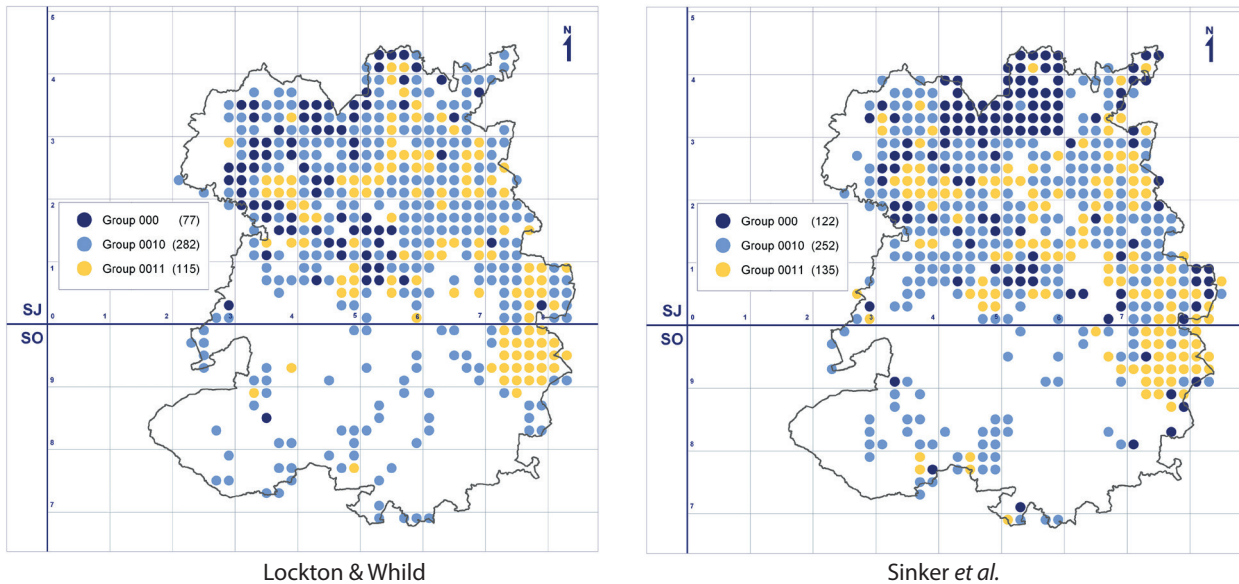
Groups	Tetrads from the Lockton & Whild survey 1985-2013	Tetrads from the Sinker <i>et al.</i> survey 1970-1984	Total number of tetrads
Group 000	77	117	194
Group 0010	268	246	514
Group 0011	111	129	240
Totals	456	492	948

**Figure 9** shows the distribution of the three groups of tetrads (Groups 000, 0010 and 0011) in Shropshire in the two surveys. Group 000 is revealed as incorporating most of the classical ‘Meres and Mosses’ areas of north Shropshire, plus the upper reaches of the River Severn (except between Shrewsbury and Ironbridge) and the Llanymynech/Oswestry lowlands, including the Montgomery Canal. There are also scattered areas along the eastern border of the vice-county in Group 000, particularly in the 1970-84 survey.

The implication of Table 14 is that there has been a sharp reduction in tetrads belonging to Group 000 between the two surveys. From Figure 9, it is clear that a large proportion of this change is associated with the Meres and Mosses hectads SJ43, SJ53 and SJ54. The blanket inclusion in the 1970-84 map of almost all the tetrads in these hectads in Group 000, except in the immediate environs of the town of Whitchurch, suggests over-recording. This is of course an area of Shropshire much investigated scientifically throughout the period of the 1970-84 survey and some data may record species lost, or areas deteriorating, very early in the 1970s.

Outside the main ‘Meres and Mosses’ area Figure 9 suggests that there has not been a profound decrease in Group 000 tetrads. Indeed in north-west Shropshire a larger number of tetrads appear to be included in the rich wetland Group 000 in the 1985-2013 survey. On the other hand, a large proportion of the Group 000 tetrads in the north-east borders seem to have lost significant wetland species and moved into the less rich Group 0010, particularly in SJ74, SJ64 and SJ80 (although the earlier survey included parts of Weston Park in Staffordshire).

The division between Group 0010 and Group 0011 is probably largely one of topography, geology and agricultural intensity, with Group 0011 occupying the higher, drier and more easily agriculturally intensifiable portions of the north Shropshire plain. Table 14 shows that there has however been a small decrease in the number of tetrads within this group, possibly reflecting a better knowledge of marginal tetrads and not suggesting a strong trend towards further agricultural intensification, which was probably well-advanced in these better-drained areas at the time of the 1970-84



**Figure 9.** The Shropshire tetrads showing the distribution of three main TWINSpan endgroups within the wetland/farmland-oriented Group 00 in the survey for Lockton & Whild (1985-2013) and for Sinker *et al.* (1970-1983). All ‘A’ species as defined in Sinker *et al.* 1985 have been omitted from the analysis and all tetrads not included in both surveys or represented by fewer than 10 species after elimination of the ‘A’ species.

survey. The main change seems to be an increase in Group 0010 at the expense of Group 000, suggesting deterioration in botanical quality. There is, however, also an increase in Group 01 tetrads in North Shropshire at the expense mostly of Group 0010 tetrads in the 1970-84 survey, which suggests the recognition of more old, shaded habitats possibly missed in the earlier survey.

In view of the uncertainty about SJ43, SJ53 and SJ54, and the large number of marginal tetrads, it is even more difficult to characterise change in north Shropshire than elsewhere. The particular significance of rich, relatively eutrophic wetland habitats was to be expected. The 1985-2013 map suggests a good level of coherence at the landscape scale in the richer area, which is partly, but not entirely, mediated by the river valleys. The comparison of the two surveys implies deterioration in conservation terms in some areas of Group 00 and improvement in others.

## Appendices

### Appendix 1: Group 1 Preferentials

Achi_pta	Care_car	Dact_mac	Hydr_vul	Luzu_pil	Polp_vul	<b>Ulex_gal</b>
Agro_can	Care_dem	Dant_dec	Hype_hum	Luzu_syl	Poly_ser	Umbi_rup
Aira_car	Care_ech	Desc_fle	Hype_pul	Mela_pra	Poly_vul	<b>Vacc_my</b>
Aira_pra	Care_lep	Dryo_aff	Isol_set	Moli_cae	Pota_pol	Vale_dio
Alch_fil	Care_nig	Epil_pal	Jasi_mon	Mont_fon	Quer_pet	<b>Vero_off</b>
Anag_ten	Care_pae	Erio_ang	Junc_acu	Myos_dis	Ranu_hed	Vero_scu
Apha_arv	Care_pil	Erop_ver	Junc_bul	Myos_sec	Ranu_omi	Viol_pal
Aspl_tri	Care_pul	Euph_off	Junc_con	Nard_str	Rhin_min	Viol_rei
Beto_off	Cera_cla	<b>Gali_sax</b>	Junc_squ	Oreo_lim	Rosa_mol	Vulp_bro
Blec_spi	Chry_alt	Gali_uli	Lath_lin	Pedi_syl	Sene_syl	
Briz_med	Chry_opp	Glyc_dec	Linu_cat	Pimp_sax	Thym_pol	
<b>Call_vul</b>	Dact_fuc	Hier_sp.	Luzu_mul	Polp_int	Trig_pal	

Indicator species in **bold**, axiophytes highlighted

Names are first four letters in genus name plus first three in species name, except Polp = *Polypodium*; Care\_pae = *Carex panicea*; Hier\_sp. = *Hieracium* sp.

### Appendix 2: Group 01 Preferentials

Adox_mos	Brom_ram	Dryo_aff	<b>Lami_gal</b>	Myce_mur	Prim_ver	<b>Vero_mon</b>
Alch_fil	Camp_tra	Euon_eur	Lath_lin	Myos_dis	Quer_pet	Vero_off
Aspl_sco	Care_pen	<b>Gali_odo</b>	Leon_his	Orch_mas	Ranu_aur	Viol_odo
Aspl_tri	Care_syl	Hier_sp.	Luzu_pil	Pimp_sax	<b>Sani_eur</b>	Viol_rei
Beto_off	Chry_alt	Hype_hir	Lysi_num	Polp_vul	Sche_gig	
Blec_spi	<b>Chry_opp</b>	Hype_mac	Meli_uni	Poly_acu	Stel_neg	
Briz_med	Clin_vul	Hype_pul	Mili_eff	Poly_set	Trif_med	

Indicator species in **bold**, axiophytes highlighted

Names are first four letters in genus name plus first three in species name, except Hier\_sp. = *Hieracium* sp.; Polp\_vul = *Polypodium vulgare*

## Changes in the vascular plant flora of Shropshire

### Appendix 3: Group 00 Preferentials

Anch _arv	Card _nut	Lyco _eur	Papa _dub	<b>Ranu _sce</b>	<b>Sile _lat</b>	Stac _pal
Bryo _dio	Glyc _max	Myos _lax	Pers _amp	Sali _vim	Sola _nig	Urti _ure

Indicator species in **bold**, axiophytes highlighted.

Names are first four letters in genus name.

### Appendix 4: Group 0110 Preferentials

Achi _pta	Clin _vul	Fuma _off	Lath _squ	Myos _dis	Ranu _aur	Trif _cam
Alch _fil	Coni _mac	Gali _sax	Leon _his	Neot _ova	Rhin _min	Verb _tha
Alis _pla	<b>Cruc _lae</b>	Geni _tin	Lina _vul	<b>Orch _mas</b>	<b>Sani _eur</b>	Vero _off
Barb _vul	Dact _fuc	Geum _riv	Linu _cat	Pari _qua	Sene _aqu	Vici _hir
Blec _spi	Desc _fle	Hype _hir	Luzu _mul	Pedi _syl	Sile _lat	Viol _rei
Briz _med	Epip _hel	Hype _hum	Luzu _pil	Pers _bis	Symp _off	
Camp _tra	Erop _ver	Hype _pul	Luzu _syl	Pimp _sax	Thym _pol	
Card _cri	Eupa _can	Knau _arv	Lysi _num	Poly _vul	Tili _cor	
Cent _ery	Euph _amy	<b>Lath _lin</b>	Malv _mos	<b>Prim _ver</b>	Trag _pra	

Indicator species in **bold**, axiophytes highlighted.

Names are first four letters in genus name plus first three in species name plus first three in species name.





# SITES OF INTEREST AND PLACES TO VISIT



There are, of course, many interesting sites around Shropshire, and the species accounts mention a large number of sites where plants can be seen. But it is difficult to work out what is on each site from the paper version of this Flora, so here are some suggestions of things to see in some of the more important places.

### Attingham Park

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**Attingham Park** is a National Trust property. Access is via the main gate in Atcham and there is ample parking near the house. For non-members there is an entrance fee which allows access to the house and the grounds. The Mile Walk is the most popular route, along the bank of the River Tern. It passes a tiny kettlehole mere that once contained Orange Foxtail (*Alopecurus aequalis*) but it is now dry. At the northern end of the walk there is some alder woodland by the river which is rich in spring flowers such as Large Bitter-cress (*Cardamine amara*) and Orange Balsam (*Impatiens capensis*). The other main area of interest is the Deer Park with its acid grassland and a small pond filled with Tubular Water-dropwort (*Oenanthe fistulosa*). Those who venture further into the plantations may be rewarded with such riches as Cowbane (*Cicuta virosa*) in small woodland ponds. Two detailed studies of the Park (Perring 1975 and Whild & Lockton 2005) have shown that conservation has been well served by the Trust's management, possibly because there is a focus on landscape and habitats rather than species.

### Benthall Edge

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**Benthall Edge** is easily accessible from car parks in the Ironbridge Gorge and is a great example of a W8 *Fraxinus excelsior* wood. It is managed by the Severn Gorge Countryside Trust, which was set up when Telford New Town was developed, and is entirely open to the public (except for the area around the power station). There is an abandoned railway running along the bottom and a small quarry, Pattens Rock Quarry, towards the top. The quarry is maintained as open grassland only by constant conservation efforts which have been largely successful. Here, you can find Early Purple Orchid (*Orchis mascula*), Greater Butterfly Orchid (*Platanthera chlorantha*), Bird's-nest Orchid (*Neottia nidus-avis*) and Pyramidal Orchid (*Anacamptis pyramidalis*) with Common Twayblade (*Neottia ovata*), and elsewhere in the wood you might find Violet and even Green-flowered Helleborines (*Epipactis purpurata* and *phyllanthes*). Trees include Wild Service (*Sorbus torminalis*) and both Limes (*Tilia* sp.), and Wood Barley (*Hordelymus europaeus*) can be spotted on the slopes.

### Brown Clee

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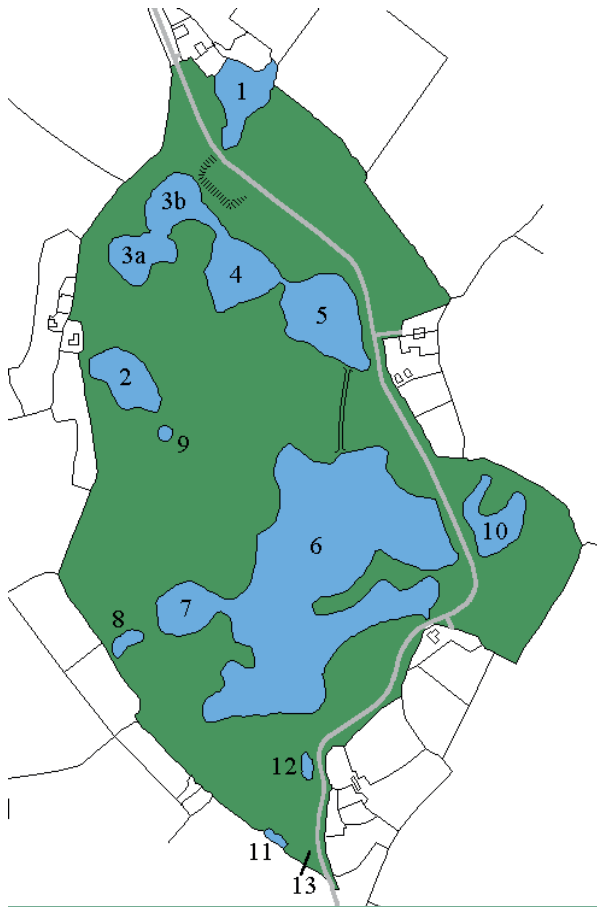
**Brown Clee** is the highest hill in Shropshire and in recent years it has given us many British altitudinal records, in demonstration of the principle that plants in the northern hemisphere occur at higher altitudes as they progress south. There is a car park on the east side, at SO607871, from where visitors can walk anywhere on the hill. The pools and flushes are perhaps the most interesting botanical features, as the rocky summit with its Parsley Fern (*Cryptogramma crispa*) and clubmosses was quarried away many years ago.

### Brown Moss

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**Brown Moss** is perhaps the most famous – or notorious – botanical site in the county. It has the highest possible conservation status, being protected by the international Ramsar convention, the European Habitats Directive, and the national Wildlife & Countryside Act and Countryside and Rights of Way Act. It is common land, which protects it from agricultural development, and it is owned and managed by Shropshire Council as a nature reserve. None of this has prevented the loss of many of the species for which it was designated over the last 50 years or so; a loss that can be almost entirely attributed to a lack of appropriate management.

Pillwort (*Pilularia globulifera*), Floating Water-plantain (*Luronium natans*), Lesser Water-plantain (*Baldellia ranunculoides*), Least Bur-reed (*Sparganium natans*), Many-stalked Spike-rush (*Eleocharis multicaulis*) and Round-leaved Sundew (*Drosera rotundifolia*) are amongst the species that are either gone entirely or now just spring up transiently if the seed bank is disturbed. Numerous plants of interest remain, however, including Orange Foxtail (*Alopecurus aequalis*), the radiate form of Nodding Bur-marigold (*Bidens cernua* var. *radiata*), Small-fruited Yellow-sedge (*Carex oederi*) and, in hot summers when there is plenty of drying organic mud around the main pool, the extremely rare liverwort Channelled Crystalwort (*Riccia canaliculata*).



Sinker's numbering system for the pools at Brown Moss

## Catherton Common

On the north-east slopes of Titterstone Clee is **Catherton Common**, a large expanse of unenclosed heathland. It is easy to park on the roadside in the common, or in a layby in the village of Cramer Gutter and walk along the footpath to the small nature reserve of the same name. Here there is a small population of Marsh Gentian (*Gentiana pneumonanthe*) – the only one in the English Midlands – which appears to be on the verge of extinction. The problem has been under-management, which results in the grassland scrubbing over with gorse. The landowners, Shropshire Wildlife Trust, are attempting to cut or burn the scrub off, but it soon grows back again. As a consequence the population of gentians has shrunk over the last twenty years from several hundred plants in three flushes to around 20 – 50 plants remaining in one patch in the middle of the field. Other interesting things to look out for in this area include Common Butterwort (*Pinguicula vulgaris*), Bog Asphodel (*Narthecium ossifragum*), Broad-leaved Cottongrass (*Eriophorum latifolium*) and Early Marsh-orchid (*Dactylorhiza incarnata*).

## Cole Mere

**Cole Mere** is one of the few meres with good public access. It is operated as a Country Park by Shropshire Council and there is a free car park close to the shore. It is one of the richest meres for plants as it still retains an



Attingham Deer Park



Benthall Edge by Mike Ashton



Brown Moss by Mike Ashton





Earl's Hill crags



Carding Mill Valley, Long Mynd



Blodwell Rocks

open shallow shoreline near to the sailing club. The threat to lakes like this is stabilization of the water level, because wave action soon creates a small, vertical bank. Above this bank the shoreline becomes dry and the characteristic wetland plants disappear, whilst in the water the overhanging trees shade out the aquatics. At Cole Mere this process is only partial, and there is an extensive area of W5 *Alnus glutinosa* woodland in Yell Wood with abundant Elongated Sedge (*Carex elongata*) and some Greater Spearwort (*Ranunculus lingua*). In the water there are two patches of Least Water-lily (*Nuphar pumila*) in its only English site. It is vitally important to keep trees off this part of the shoreline. The meadow is also very fine, being perhaps the only native site for Meadow Thistle (*Cirsium dissectum*) in the county.

It was a rather bigger site before the Llangollen Canal was put through on a sizeable embankment in the early 19<sup>th</sup> century, which divided it from the other half of the peat basin, Black Lake. This is a rich W5 woodland with a dark, peaty lake. Adjacent to the wood is a huge meadow, also on the peat, which is similar to Yell Meadow. Unfortunately Black Coppice and the meadow are not accessible to the public and by an oversight were not included within the SSSI.

### Earl's Hill

**Earl's Hill** is still the Wildlife Trust's flagship reserve, 50 years after it was donated to the fledgling organization by Dr & Mrs Chitty in 1962. There is a car park on the road from Pontesbury (SJ406053) and from there you can walk around Pontesford Hill to get onto the reserve. On the summit and western slopes there is acid grassland, but the eastern slopes are calcareous and support W8 *Fraxinus excelsior* woodland. In the past there were also superb MG5 *Festuca rubra* meadows, rich in Rose-moss (*Rhodobryum roseum*), but these have scrubbed over into rather species-poor W8; the flushes have suffered the same fate. In recent years the Wildlife Trust has acquired some additional meadows on the north-east side of the hill. These retain more value than the grassland on the lower slopes within the reserve but have been damaged by some degree of agricultural improvement.

Plants to look out for include Wild Service (*Sorbus torminalis*) and both species of Lime (*Tilia*) in the woods, and numerous ephemerals typical of U1 *Rumex acetosella* grassland, such as Small Cudweed (*Filago minima*), on the slopes. A few tiny patches of Rock Stonecrop (*Sedum forsterianum*) and Bloody Crane's-bill (*Geranium sanguineum*) persist on the scrubbed-over scree. At the bottom of the valley Upland Enchanter's-nightshade (*Circaea × intermedia*) is abundant, mainly on the other side of the Habberley Brook, which rises towards the marvellous Oaks Wood.



This is a complete contrast to the western side, with acid oak woodland containing such rarities as *Bazzania trilobata*, and both species of *Leucobryum*. In the past, these formed substantial hummocks a metre or more tall, but they were destroyed in the 2000s when much of the tree cover was felled in a forestry operation. In a deep valley the rare Wood Fescue (*Festuca altissima*) can be found clinging to humid cliffs.

## Haughmond Hill

Just east of Shrewsbury is **Haughmond Hill**, a low outcrop of Longmyndian shale. It used to be a SSSI but was de-scheduled when it was planted up for forestry; but although some of the forestry compartments are dark and dreary, it seems that all the botanical interest persists along the rides and in the clearings. The southern slopes are U1 *Rumex acetosella* grassland which is kept open by rabbit grazing and an occasional fire, while the plateau supports some wet woodland of W4 *Betula pubescens* amongst large areas of W10 *Quercus robur*. A quarry has eaten away a large chunk of the hill and although there are guarantees that it will not be extended, that seems a distinct possibility unless its protected status is reinstated. At present the whole hill is open to the public.

Across the road is Haughmond Abbey, an English Heritage property, and there is a good walk through the adjacent Abbey Woods, where there is a tiny kettlehole mire hidden in the woods, which contains a small patch of Elongated Sedge (*Carex elongata*).

## Highley-Alveley Country Park

**Highley-Alveley Country Park** has recently been renamed Severn Valley Country Park, but here we have retained the old name as it seems more explicit. It is a former coal mine and has a lot of rather ruderal and early-successional vegetation, but it is also well connected to footpaths along the Severn and ancient woodlands. It is best to approach the park from the Alveley side and park at SO753839. Plants to look out for include Wild Parsnip (*Pastinaca sativa*) at one of its few Shropshire sites, and Violet Helleborine (*Epipactis purpurata*) in woodland just across the bridge on the Highley side.

## Hope Valley

**Hope Valley** is along the hazardous winding road between Shrewsbury and Bishops Castle, but if you pull into the Wildlife Trust's car park at SJ349016 you can explore the woodland and the countryside beyond, which is very pleasant. The woods range from neutral W10 *Quercus robur* to rather fine W16 *Q. petraea* on some of the slopes. Shining Hookeria (*Hookeria lucens*) occurs in profusion by the stream.



Black Coppice Pool



Bomere Pool



Queen's Head





Patters Rock Quarry



Prees Heath

## Llynclys Hill

The best place to park for **Llynclys Hill** is on the layby just west of Llynclys Crossroads at SJ278241. There are extensive areas of ancient woodland on the slopes and calcareous grassland on the top. It is common land and most of the area belongs to the Wildlife Trust, so you can walk anywhere. The management consists largely of clearance of random patches of woodland, which seems highly favourable to Greater Butterfly-orchids (*Platanthera chlorantha*), which occur there in abundance. The Lesser Butterfly-orchid (*P. bifolia*) is restricted to a small patch of grassland, and most of the remaining plants seem to be hybrids. Many of the rarest plants are to be found on the cliffs and steep slopes on the west side of the hill, heading south towards Llanymynech Hill. Here there are whitebeams (*Sorbus anglica*, *aria* and *cuneifolia*), Southern Polypody (*Polypodium cambricum*) and Small Scabious (*Scabiosa columbaria*).

## Montgomery Canal

The **Montgomery Canal** is still a pleasant walk, but it no longer has the wonderful diversity of aquatic plants that made it such a notable site in the past. A good place to start is at Queen's Head (SJ338268) where the Waterways Trust maintains a car park. A short distance south along the canal is the Aston Locks reserve, one of a series of 'offline nature reserves' which were created to offset the damage done by the restoration of the canal to navigation. These offline reserves were effectively ponds, and they seem to have failed to preserve many of the plants they were supposed to protect, such as Floating Water-plantain (*Luronium natans*), Grass-wrack Pondweed (*Potamogeton compressus*) and Red Pondweed (*P. alpinus*).

If you want to see these species now, you have to go over the border to the Welsh sections of the canal, which have not yet been opened to motorized traffic. The problem is that the propellers on canal boats stir up sediment, making the water completely opaque. Solutions that would work include somehow towing the boats along important stretches, or creating reserves that are exactly like canals, complete with a gentle flow. In some places side arms, such as the Rednal Basin, still have relatively clear water and retain some water plants. Unfortunately, there are no canals or even branches of canals in the county that are primarily managed for conservation purposes; the only exception being the Prees Branch, which has little botanical interest.

## Long Mynd

The **Long Mynd** is the largest expanse of semi-natural habitat in the county. It consists of a plateau of numerous rolling hills divided by small 'batches,' each of which contains a small stream that typically rises in an extensive fen and is fed by many small flushes. Many of the streams are dammed in places, creating hundreds of small pools dotted around the landscape; they are often hard to see except at very close quarters.

Bryophytes are the main focus of interest on the Long Mynd, with Duval's Thread-moss (*Bryum weigelii*) usually attracting the most interest, although it is by no means the only rarity. Over 300 species have been recorded there to date. Other things to look out for include Sea Stork's-bill (*Erodium maritimum*) on the southernmost slopes and Alternate Water-milfoil (*Myriophyllum alterniflorum*) in the pools. The common land on the Long Mynd is grazed by sheep and over-stocking has been a problem in the past. Management by the National Trust has therefore focused in recent years on trying to reduce the level of grazing; but this is a very unusual situation. Almost all other conservation sites suffer from a want of grazing pressure. As recently as the 1940s, the Nature Conservancy considered the Long Mynd to be



neglected and overgrown, and they even recommended it as a suitable site for forestry; but since then the value of bryophyte-rich flushes, acid grassland and heathland have become more widely recognized.

Visitors to the Long Mynd would be well advised to start at Carding Mill Valley where there is a coffee shop and facilities, and one should gratefully pay the nominal parking fee. You can walk wherever you like within the National Trust property and generally elsewhere; even the airfield is open to the public, but do ask permission before wandering off the footpath or over the runway. There are several roads leading up to the plateau, and many free parking areas on top; the Burway leading up from Church Stretton is worth the journey for those with a head for heights.

## The Mere

**The Mere** at Ellesmere is the easiest of all the meres to visit. There is ample parking along the roadside and adjacent to The Moors, a small common situated at the south east end of the mere. The mere itself is highly eutrophic and has very little of interest except for some Needle Spike-rush (*Eleocharis acicularis*) along the north shore, but The Moors is worth a visit. This was once a huge mire that extended across where the road and the canal now are, and has records dating back to 1632. Although the Moors is somewhat scrubbed over, it still has patches of Common Cottongrass (*Eriophorum angustifolium*) and, when the council dug some cuttings in the peat in the 1990s, they filled with Bog Pondweed (*Potamogeton polygonifolius*). Along the edge of the lake here is a huge patch of Bogbean (*Menyanthes trifoliata*) extending across the water.

## Moelydd

**Moelydd** is a limestone hill above Nantmawr. The easiest places to park are on lay-bys, access is via footpaths, and the main expanse of the hill is open to wander around. This is the best site in Britain for Scarce Prickly-sedge (*Carex muricata* ssp. *muricata*), which grows on the cliffs at Jones's Rough and on the spoil around old mine pits. With 87 species of axiophyte recorded there, this is the best site in the county that is not recognized as a SSSI, and there are plenty of things to see, including flushes, calcareous grassland with Common Rock-rose (*Helianthemum nummularium*) and Autumn Gentian (*Gentianella amarella*), and quarry waste with Hairy Rock-cress (*Arabis hirsuta*). Red Hemp-nettle (*Galeopsis angustifolia*) and Kidney-vetch (*Anthyllis vulneraria*) are two rarities that used to occur at Jones's Rough but seem to have disappeared in recent years due to neglect of management.



Old Oswestry Hillfort



Brown Moss, Pool 3b

## Old River Bed

The **Old River Bed** is an extensive sedge swamp in the northern suburbs of Shrewsbury, occupying the site of a former meander in the Severn – a river which no longer cuts off oxbow lakes, as it is so much smaller than it once was and doesn't have the power to erode its banks. It is said that the Old River Bed used to be deliberately flooded as part of the defence of the town against invasion, and it is even likely that the name of the town (originally Scrobbsburgh, 'scrubby town') and county derive from this feature. Alder carr would have made up a large part of the north Shropshire plain, from the Weald Moors to the peaty river valleys and the isolated meres and mosses. Nowadays the Old River Bed has only scattered scrub thanks to the management and (more significantly) the effect of Alder Pox, *Phytophthora alni*. The swamp is mostly made up of Lesser Pond-sedge (*Carex acutiformis*) and Brown Sedge (*C. disticha*) but there are many other species of interest there. It is a good place to see Purple Small-reed (*Calamagrostis canescens*) fen, which is arguably an as-yet undescribed vegetation





Rhos Fiddle by Mike Ashton



View from Devil's Chair, Stiperstones

community, and at the foot of the slope there is one of the few surviving populations of Narrow-leaved Everlasting-pea (*Lathyrus sylvestris*).

It used to be open to the public and have a boardwalk across the middle, but it was frequently vandalized and the council now keeps it fenced off, which has the advantage that they can keep cattle on the site. Visitors can park on the roadside at SJ494148 and climb over a gate to get into the swamp.

### Old Oswestry

**Old Oswestry** hillfort (park at SJ293309) is mainly of interest for its Iron Age fortifications, but it is open to the public and free to visit, and the ramparts are sometimes festooned with Greater Broomrape (*Orobancha rapum-genistae*). In a good year there can be dozens of spikes, but English Heritage has a sporadic programme of removal of gorse and broom, so it comes and goes with the host plants. On the west and north sides of the hillfort the vegetation is heathland, evidently derived from W16 *Quercus petraea* woodland, which was first noted here by John Leland in 1542. The trees were cleared as recently as

the 1970s, and it could be argued that the woodland should be restored.

### Prees Heath

**Prees Heath** is, like Brown Moss, a part of the former Whitchurch Heath and in some ways it is very similar. It was once closely grazed U1 *Rumex acetosella* grassland with damp *Sphagnum*-filled hollows, but the whole site was levelled into an airfield during the Second World War. It now has some heathland on the old runways which harbours a small population of the rare Silver-studded Blue butterfly, (*Plebejus argus*).

Most of the site is made up of sandy fields that the owners, Butterfly Conservation, are attempting to restore to heathland. Their approach so far has been somewhat industrial, with deep ploughing, application of chemicals to produce the desired soil pH, controlling weeds by spraying herbicides, and sowing and planting the desired plants. The main success so far has been the appearance of Bristly Stonewort (*Chara hispida*) and Blunt-flowered Rush (*Juncus subnodulosus*) in a deep pit that was excavated, which hints at the possibilities that could be achieved if the gently undulating grassland landscape was restored. The main feature of interest is the acid grassland in the undisturbed areas, which has dozens of species of axiophytes, including Heath Dog-violet (*Viola canina*) in its only confirmed site in the county. There is parking in a lane off the A49 (SJ557362) and the whole area is open to the public, although it is overused and not on the whole respected by dog walkers.

### Rhos Fiddle

**Rhos Fiddle** is a fine remnant of the moorland and rough grazing pasture that must have once covered many of the hills in the south-west. It is easy to get there and park, and visitors are free to wander around. There is nothing of exceptional rarity, but it is good place to see vegetation that is almost blanket bog, and grassland dotted with Yellow Mountain Pansy (*Viola lutea*).

### Stevenshill

**Stevenshill** is a privately owned forestry wood, but there is a footpath through the valley and the owners are keen on conservation. It is a fine example of a base-rich W8 *Fraxinus excelsior* wood, with ash and cherry dominating the canopy, and it contains some particular rarities such as Deadly Nightshade (*Atropa belladonna*) and Wall Whitlowgrass (*Draba muralis*) on an old limestone wall. In early spring the valley is filled with millions of Snowdrops (*Galanthus nivalis*).

## The Stiperstones

The **Stiperstones** is a ridge with a number of peaks, from Maddox's Coppice and Eastridge Wood at the north to Black Rhadley in the south. The whole area is open access and there are various places to park, including The Bog (SO359978) and the Stiperstones car park at SO369977. The dominant vegetation is heathland which is managed by Natural England by burning on rotation of about 30 years. The aim is to maintain the heath whilst allowing woodland to slowly advance naturally up the valleys. Elsewhere conifer plantations are gradually being cleared. It is one of the few reserves with no real ecological problems, except that the reserve itself could be bigger and a lot of the more valuable areas on the lower slopes have been lost to agricultural intensification over the last 30 years.

The heathland on the Stiperstones becomes progressively more interesting with altitude, starting with H8 *Ulex gallii* on the lower slopes, then H9 *Deschampsia flexuosa* above that, and then H12 *Vaccinium myrtillus* at the summit, with Cowberry (*Vaccinium vitis-idaea*) and Crowberry (*Empetrum nigrum*) abundant. On the north-facing slopes of some of the dingles there is H21 *Sphagnum capillifolium* heath, where the steep ground is deeply covered by hummocks of moss, kept moist only by rainfall and the humidity of the air.

Hybrid Cowberry (*V. myrtillus* × *vitis-idaea*) has been reported from several places on the ridge. One of the more interesting plants to see is Upland Enchanter's-nightshade (*Circaea* × *intermedia*), which is most easily found at Maddox's Coppice. Yellow Mountain Pansy (*Viola lutea*) still occurs in the meadows at Rigmoores.

## Titterstone Clee

**Titterstone Clee** is common land and it is easy to get to along the track from Clee Hill village. Several large quarries have taken chunks out of the top of the hill, but extensive natural areas remain, including the boulder scree, which harbours such rarities as Fir Clubmoss (*Huperzia selago*), Beech Fern (*Phegopteris connectilis*), Parsley Fern (*Cryptogramma crispa*) and Mountain Male-fern (*Dryopteris oreades*). The huge areas of moorland around the summit conceal a multitude of flushes and streams with Ivy-leaved bellflower (*Wahlenbergia hederacea*) and Marsh St John's-wort (*Hypericum elodes*). Even the spoil heaps in the quarry are of interest for plants such as Moonwort (*Botrychium lunaria*) and Sea Mouse-ear (*Cerastium diffusum*).



Lea Quarry



Whixall Moss by Mike Ashton

## Wenlock Edge

**Wenlock Edge** can be initially disappointing, being a narrow ridge of limestone with a fast and dangerous road along much of its summit. If you keep away from the road, however, there are some good walks. One of the best places to visit is Blakeway Hollow, immediately above the car park at Much Wenlock (SO612996). The Hollow is the only place to see Field Garlic (*Allium oleraceum*), and it has many other interesting plants. Beyond that is the path along the top of Lea Quarry, which is dotted with Common Gromwell (*Lithospermum officinale*) and Basil Thyme (*Clinopodium acinos*). The other hotspots that are particularly worth a visit are Harton Hollow – a small Wildlife Trust reserve with the only known population of Lesser Hairy-brome (*Bromopsis benekenii*) – and Roman Bank, where there are orchid-rich meadows and Woolly Thistle (*Cirsium eriophorum*) on the sides of the tracks.



### Whixall Moss

**Whixall Moss** is one of the largest lowland raised mires in Britain. It is almost entirely nature reserve and there is a convenient car park at SJ487358. Reserve signs say you need a permit to explore the moss, but it seems unlikely that many people obtain one. The main expanse of bog was drained and the surface was removed in preparation of large scale peat removal in the late 1980s, but it was eventually purchased by the Nature Conservancy Council after a public outcry.

It is a fascinating site for studying restoration in action. The moss was originally little more than bare peat, and management has concentrated on raising water levels and allowing the *Sphagnum* to re-grow. But too high a water level and you get a lake which fills with Soft-rush (*Juncus effusus*) and is unsuitable for bog formation. Meanwhile, species like Round-leaved Sundew (*Drosera rotundifolia*) have declined from abundant to almost extinct. The main success is that the drains and peat cuttings have filled with Feathery Bog-moss (*Sphagnum cuspidatum*), but it seems that it will take decades more before any real benefits are felt.

The management has sometimes been diverted by issues such as the eradication of non-native species, especially Scots Pine (*Pinus sylvestris*) which, although not currently considered to be native in England now, was certainly present in the past and which is quite conducive to the formation of raised mires. When parts of Bettisfield Moss were cleared of conifer plantation, it was found that the mire surface had persisted almost intact below the trees. Things to look out for on Whixall Moss include Waved Fork-moss (*Dicranum undulatum*) and Lesser Bladderwort (*Utricularia minor*) in its only site in the county.

The southernmost portion of the Whixall Moss complex is Wem Moss, which is owned by Shropshire Wildlife Trust. It is open to the public and accessible via

footpaths. This was formerly the most unspoiled bog in the county, with three species of sundew and 12 of *Sphagnum*, including Golden Bog-moss (*S. pulchrum*). Unfortunately it was largely neglected for 40 years, during which time it scrubbed over with birch (*Betula* spp.) and Bog-myrtle (*Myrica gale*), and most of the sundews are long gone. There is historical evidence that Wem Moss used to be grazed by cattle, which would keep the scrub at bay and poach the surface to create wet hollows. This would be the promising management for the site in future, if it is ever to return to its former state.

### Windmill Hill

**Windmill Hill**, on the edge of Much Wenlock, is a small but valuable patch of unimproved grassland. It is managed by a voluntary group from the town, and it is just about maintaining its ecological quality, despite being undergrazed. Species to look out for include Dropwort (*Filipendula vulgaris*) and Deadly Nightshade (*Atropa belladonna*). To get there, park in the layby on the Farley Road at SJ623009 and cross the road to the reserve.

### Wyre Forest

The **Wyre Forest** is an extensive woodland straddling the corners of Shropshire, Staffordshire and Worcestershire, with the largest portion being in Shropshire. There are several places to park, and access is generally open throughout. The area is interesting for its heathy vegetation and it has a flora that is more typical of northern and western parts of Britain, with acid woodland communities that have not yet been characterized, but probably include W17 *Leucobryum glaucum* and possibly W11 *Oxalis acetosella*, although that has not yet been confirmed for the county. Plants to look out for in the Wyre include Wild Service Tree (*Sorbus torminalis*), Bloody Crane's-bill (*Geranium sanguineum*) and Chaffweed (*Centunculus minimus*). There is also species-rich grassland along the path of the Elan pipeline. The main management objective in the Wyre is now removal of the extensive conifer plantations and replanting with deciduous trees.



Wyre Forest





# VEGETATION COMMUNITIES

**The system of classification used here is the National Vegetation Classification, as described by Rodwell (ed.) (1991-2000). The NVC lists several hundred assemblages of plants, taken from typical stands of semi-natural vegetation and from some of the more recognisable man-made habitats throughout Britain. They are firstly divided into habitats (woodland, grassland, etc.) and then subdivided into about 20-40 communities within each habitat. Most of the communities are characteristic of a combination of soil type, altitude, rainfall, latitude and management. Many of them can be further split into 3 or 4 subcommunities, again dependent on the same variables.**

It is easy to use the NVC for little more than describing the vegetation of a site, but it has the potential for analytical uses as well. With a reasonable amount of data, it is possible to calculate the approximate quantity and distribution of the various communities, to help determine conservation priorities. It is often possible to work out how one community changes into another as a result of management or a changing environment. Once such successions are known, the threats to important sites can be anticipated and the consequences of management interventions predicted. The ultimate use of vegetation science comes from understanding which species (plant or animal) are dependent on one or a few particular communities, and then one can manage the populations of those species by simple, often highly cost-effective adjustments to the management of the vegetation. An understanding of vegetation is thus central to nature conservation and valuable in other forms of land management.

In this Flora we have listed all the vegetation communities known to occur in Shropshire and listed the communities in which each species is found. Of course this not comprehensive, but it is hopefully a useful starting point. One thing we decided whilst undertaking this project was not to accept any NVC designations that were not backed up by data, so all our listings are based on quadrats

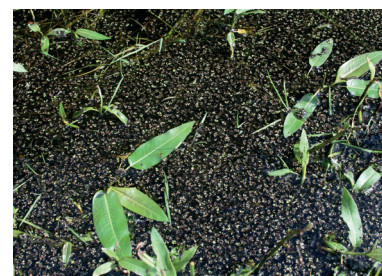
recorded by named individuals at known sites on a known date. This is important because communities can change and they will not necessarily still be present at the sites where they were recorded. In nearly every instance the analysis of the quadrat data was by ourselves, and in some cases the community listed is not the one described by the original recorder. The reason for this is that most recorders do not have access to a large database, so they can only work on the very small data set they have collected (often just one or two quadrats). This often leads to some surprising and rather unlikely results. Our database contains some 1,000 quadrats which have been subjected to more rigorous analysis using TWINSPLAN and other statistical techniques. We have taken a conservative approach in using only the communities described in the NVC rather than attempting to describe any new ones. This broadens the definitions of some communities that are either particularly well represented in Shropshire or which were originally described using small numbers of samples. We have found little need to include communities that would not be expected in this part of the country, but there are a few cases where our data suggests an expansion in the known range of some. All our data are freely available for further analysis if anyone would like to explore our conclusions further.

The list below includes all the vegetation types that we currently know of in Shropshire, with some notes on their distribution and habitat. We have used shortened forms of their names in order to make the text readable, usually naming them after one of their most characteristic species. Thus, 'W8 *Fraxinus excelsior*' is shorthand for 'the lowland woodland or hedgerow community of base-rich soils typically dominated by ash' rather than an actual stand of *F. excelsior*. An individual stand of W8 might contain no ash at all, but be dominated by cherry, elm, oak, lime, poplar or even coniferous trees.

### Aquatic vegetation

A2 *Lemna minor*. Widespread in lakes, ponds, canals, ditches, backwaters of rivers and temporary pools in ruts and hollows in grassland. Samples from pools at Brown Moss include the A2b *Lemna trisulca* subcommunity and sometimes the A2c *Ricciocarpus natans* subcommunity, but that occurs only infrequently.

A3 *Hydrocharis morsus-ranae* community is very rare, our only sample being from the Newport Canal at Newport in c. 1981 (Trueman).



A2c *Ricciocarpus natans* at Brown Moss

*Azolla filiculoides* community (not given a designated code in the NVC classification) sometimes occurs in ponds and canals. In some years ponds at Brown Moss have displayed this community rather spectacularly, but it tends to disappear after cold winters



or if the pools dry up. The Montgomery Canal has also had some notable blooms of *Azolla* on unused sections near the Vyrnwy Aqueduct, as has Heathgates Pond and the old Shrewsbury Canal in Shrewsbury. Attempts to eradicate it are generally unsuccessful, but it disappears after a while anyway.

A5 *Ceratophyllum demersum*. Canals, lakes and pools. A notable example of it was at Morton Pool in 2003, where it seemed to fill the mere.



*Azolla filiculoides* on Pool 3b at Brown Moss in 2001

A8 *Nuphar lutea* is widespread in the meres and larger pools, and sometimes in canals, but very rare in rivers – only really present in parts of the Roden and the Tern. This community includes examples which are dominated by *Nymphaea alba* (especially where it is planted), as A7 *N. alba* only occurs in more dystrophic conditions than are found here now. A distinctive subcommunity is A8b *Zannichellia palustris*, which is found in some of the meres.



A8 *Nuphar lutea* vegetation in Berrington Pool

A9 *Potamogeton natans* is widespread in ponds, canals, rivers and ditches, and is often the first community to occur in quarry ponds and other new wetlands.

A10 *Persicaria amphibia* is widespread in shallow water around the edges of the meres and along the banks of rivers, including the Severn. It is recorded at Berrington and Bomere Pools, and sometimes it is the main vegetation community in Pool 6 at Brown Moss, being particularly resilient to fluctuations in water level.



A10 *Persicaria amphibia* at Brown Moss

A11 *Myriophyllum spicatum* is typical of the larger, slower rivers such as the Severn in Shrewsbury, and the lower reaches of the Roden and Tern, where *M. spicatum* often grows with *Butomus umbellatus* and *Potamogeton pectinatus*. It also occurs in the Montgomery Canal.

A12 *Potamogeton pectinatus* is particularly notable in shallow water in the middle of Cole Mere; also in White Mere, the Mere at Ellesmere and in several canals and rivers. It is very species poor, possibly with some *Zannichellia palustris* and *Callitriche* spp.

A14 *Myriophyllum alterniflorum* occurs in oligotrophic streams and reservoirs on the Long Mynd, most notably in New Pool Hollow.

A15 *Elodea canadensis* is found in ditches, streams, canals, ponds and rivers throughout. It is effectively the same as *E. nutallii* vegetation, which occurs in similar situations and is not given a separate code in the NVC.

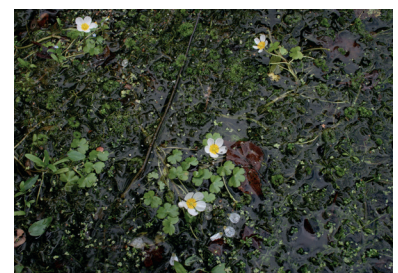
A16 *Callitriche stagnalis*. Widespread in brooks and backwaters of rivers, ponds, ditches, temporary pools and persisting on mud around pools and along woodland rides. A typical example is in the Old River Bed, Shrewsbury, where it occurs around the outflow of a culvert that drains surface water from the nearby housing estate.

A17 *Ranunculus penicillatus* occurs in the middle reaches of several of the larger rivers such as the Perry around Yeaton or, very strikingly, in the Teme at Ludlow.

A18 *Ranunculus fluitans*. Possibly only in the Severn, the lower reaches of the Roden, the River Dee and maybe parts of the Teme.

A19 *Ranunculus aquatilis*. Typical of farmland pools in fields of pasture, as at Derrington (SO601906) and Donnington (SJ577072). Not reliably recorded yet from any rivers or streams.

A20 *Ranunculus peltatus*. In rather acid, mesotrophic pools and streams. Notable examples include a pool at Battlefield (SJ512167), small pools at the summit of Brown Clee (SO593865), one on Old Oswestry, and in the stream above Wildmoor Pool. This community also occurs in the Teme at Ashford Carbonel.



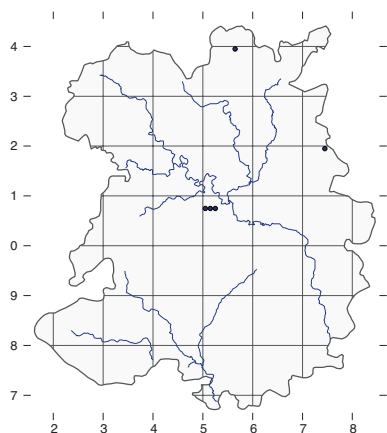
A20 *Ranunculus peltatus* at Brown Moss

A22 *Littorella uniflora*. The best remaining lowland example is at Newton Mere; it also occurs at Llyn Rhuddwyn (C. Walker, 1986), in fragmentary patches at Brown Moss and (only as stands of *Elatine hexandra* in the absence



## Vegetation Communities

of *L. uniflora*) around the margins of Bomere Pool. Also in some pools on the Long Mynd (e.g. on Novers Hill, SO453951, J. Clayfield, 2007).



Locations of quadrats in aquatic vegetation

### Calcareous Grassland

CG2 *Avenula pubescens* grassland (officially known as *Festuca ovina*-*Avenula pratensis* grassland, but *A. pratensis* is absent from Shropshire and *A. pubescens* is the most characteristic grass of this assemblage when it does occur) is the typical meadow community on the most base-rich soils, the limestone counterpart to MG5. It is quite rare, and even where it does occur it tends to be restricted to steep slopes or disturbed sites such as former quarries, where there is little build-up of humus in the soil. It rapidly succeeds to MG5 *Festuca rubra* on flat ground or to CG3 *Bromopsis erecta* if undergrazed. Good semi-natural examples can be seen on Llynclys Hill, Moelydd and Windmill Hill, and it is recorded in quarries on Benthall Edge, Craig Sychtyn, Llanymynech Hill, the Novers, Wenlock Edge and elsewhere.

CG3 *Bromopsis erecta* grassland occurs in similar places to CG2 and it can be equally species rich, but it is usually more rank and is usually dominated by *B. erecta*, often in ungrazed and uncut swards. It is therefore an analogue of MG1 *Arrhenatherum elatius*

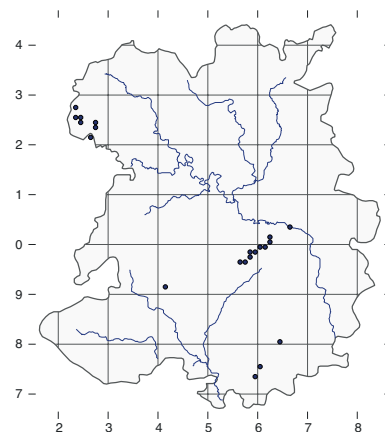
grassland on the more base-rich soils. Most of our samples are from Wenlock Edge. Hilltop Meadow has been moving from CG2 to CG3 grassland in recent years, whereas in Lea Quarry the bare ground has been colonised directly by CG3 grassland.



CG3 *Bromopsis erecta* at Hilltop Meadow

CG7 *Thymus polytrichus* grassland, the calcareous analogue of U1 *Rumex acetosella*, is a drought-tolerant community of rock exposures and thin soils overlying limestone, with *Festuca ovina* and *Pilosella officinarum*. It is very rare, occurring in just a few places on Wenlock Edge (notably at Presthoke), Llanymynech Hill, Moelydd and around Oreton. It also occurs on bare quarry spoil in Farley, Lilleshall and Nantmawr quarries where it is somewhat impoverished and rather vulnerable to succession.

CG10 *Helianthemum nummularia* grassland (properly *Festuca ovina*-*Agrostis capillaris*-*Thymus praecox*) is rare and restricted to the hills. In pastures at Cornbrook (Trueman, 1981), Minton Batch (R. Tapper, 1983) and on Llynclys Hill. It is typical of rather damp soil on limestone exposures, and it characteristically has an abundance of bryophytes, as well as calcicolous herbs.



Locations of quadrats in calcareous grassland

### Heathland

H8 *Ulex gallii* heath is the commonest heathland type throughout the county, mainly in the lowlands and on the lower slopes of the hills. It is recorded in Carding Mill Valley (Trueman, 1981), at Cramer Gutter, Prees Heath and on the lower parts of the Stiperstones. It is characterised by heather and gorse (either species) and often some *Vaccinium myrtillus*, but not usually much *V. vitis-idaea* or *Empetrum nigrum*.

H9 *Deschampsia flexuosa* heath is typical of more acid soils at higher altitudes and in areas of higher rainfall. It is recorded at Catherton Common (Trueman, 1981), at Knolls on the Long Mynd, Lower Short Ditch Turbary, on the Stiperstones and on the Wrekin (Trueman, 1981). Although *Calluna vulgaris* and *Deschampsia flexuosa* are characteristic, it often contains *Empetrum nigrum*, *V. vitis-idaea* and *Trichophorum germanicum*.

H12 *Vaccinium myrtillus* heath is a more upland community, recorded over much of the Long Mynd plateau (Trueman, 1981 and C.M. Owen, 1983), at Nipstone Rock, Rhos Fiddle and on the Stiperstones. In some places *V. myrtillus* is dominant in the absence of *C. vulgaris*, and it can be mistaken for H18 *V. myrtillus*-*Deschampsia flexuosa* heath, but this is



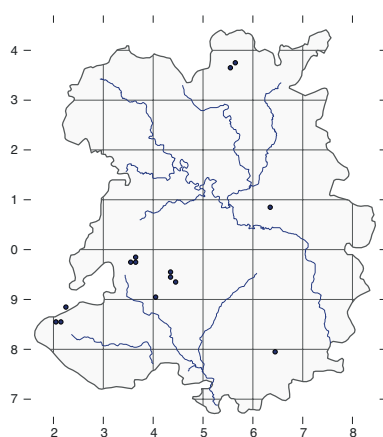
H12 *Vaccinium myrtillus* heath on the Long Mynd

a more northerly community and its presence in Shropshire has not been confirmed.

H21 *Sphagnum capillifolium* heath is very rare, being found on just a few north-facing slopes of dingles on the Stiperstones and batches on the Long Mynd. This is a highly distinctive habitat where atmospheric moisture maintains huge hummocks of *Sphagnum russowii*, *S. capillifolium* and *S. quinquefarium* amongst the heather and bilberry on these steep hillsides.



Perkins Beach



Locations of heathland quadrats

## Mires

There are two very different M2 communities: M2a *Sphagnum cuspidatum* pools occur in peat cuttings and natural pools on a few

peat bogs, whereas M2b *S. fallax* lawns (sometimes inundated) are relatively common on both lowland raised bogs and sometimes in upland bogs. M2b is recorded at Brown Moss (Trueman, 1983), Clarepool Moss, Hodnet Heath, Lin Can Moss, Rhos Fiddle, Snipe Bog and Wem Moss; M2a occurs on Whixall Moss in peat cuttings and used to be found on Clarepool Moss, but it seems to have gone from there now.



Old peat cuttings with M2 *Sphagnum cuspidatum* on Whixall Moss

M4 *Carex rostrata* mire occurs around the edges of mires, typically around lowland raised mires such as Brown Moss, Clarepool Moss, Lin Can Moss and Snipe Bog. It is also recorded at Rhos Fiddle. The main characteristic is a stand of *Carex* over *Sphagnum*, usually *recurvum* agg.

M6 *Carex echinata* mire is found in flushes, usually in upland sites such as Upper Darnford (R. Tapper, 1983) and the Stiperstones (Trueman, 1981). The M6b *Carex nigra-Nardus stricta* subcommunity has been recorded at Stapeley Hill (Trueman, 1981).

M10 *Carex dioica* flushes are scattered throughout the hills wherever there are base-rich strata in the rocks, often in places where the vegetation is otherwise rather acid, such as on the Stiperstones. The flushes are often tiny, occupying only a few square metres. They tend to be very closely grazed and sunny for the characteristic species such as *Eleocharis quinqueflora* and *Pinguicula vulgaris* to thrive.

M13 *Palustriella commutata* occurs in some very base-rich, oligotrophic flushes at Trefonen Marshes and the Stretton hills. It often grades into M10 *Carex dioica* mire and M22 *Juncus subnodulosus* fen. The Shirlett Gutter site appears to have been lost to agricultural improvement.

M15 *Trichophorum germanicum* wet heath occurs at Cramer Gutter and on Catherton Common. On the lower parts of Cramer Gutter it becomes very boggy and there is abundant *Narthecium ossifragum* – if quadrats are placed on those areas they appear to be M21 *N. ossifragum* mire, but floristically it contains only a subset of the plants in M15, so perhaps it should be considered a subcommunity instead.

M16 *Sphagnum compactum* wet heath is known only at Hodnet Heath. Small quantities persist along tracks where disturbance has kept the vegetation open and damp compared with the areas that have periodically scrubbed over.

M18 *Sphagnum papillosum* raised mires occur only on the best remaining bogs. There are patches of this community on Whixall Moss and Clarepool Moss, but possibly nowhere else.



M22 *Juncus subnodulosus* fen at Black Coppice



## Vegetation Communities

M22 *Juncus subnodulosus* fen-meadow is quite rare: it is recorded at Black Coppice Meadow, Crose Mere, Morton Pool (last seen there by D.H. Wrench, 1991), Porth-y-waen (Trueman, 1981), Sweeny Fen and Trefonen Marshes.

M23 *Juncus effusus* rush-pasture occurs throughout the county. Species-rich stands are found around the meres and in some upland flushes, but rather dreary forms occur on badly-drained farmland throughout the plain, in roadside ditches and along streams in agriculturally-improved hill pasture. The M23a *J. acutiflorus* subcommunity is much less common, and has been recorded on the Stiperstones, Stapeley Hill (Trueman, 1981) and at Boyne Water.



M23 *Juncus effusus* in a drying pool at Brown Moss

M24 *Cirsium dissectum* fen-meadows occur on deep peat where there are fluctuating levels of base-rich surface water. There are only two recorded sites, at Black Coppice and Yell Meadow, adjacent to Cole Mere.

M25 *Molinia caerulea* mire occurs on degraded mires, with *Sphagnum* around tussocks of *Molinia*. It occurs at Black Coppice Meadow, Shelve Pool (Trueman, 1981) and, formerly, at Steel Heath (last recorded in 2001) but that site is too degraded now.

M27 *Filipendula ulmaria* mire is found on peaty soils, often around the meres and mosses. It is recorded at Berrington Pool, Black Coppice Meadow, Cole Mere, Marl Allotment and The Moors, Ellesmere. Elsewhere, there are



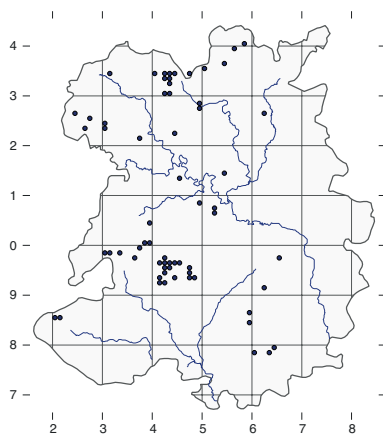
M27 *Filipendula ulmaria* mire at Berrington Pool

records of it on a roadside verge at Lower Netchwood (Trueman, 1981) and in Tunstall Wood.

M29 *Potamogeton polygonifolius* flushes are not uncommon in the uplands, where the most characteristic species is *P. polygonifolius*, and examples with *Hypericum elodes* occur in just a few places on the Long Mynd, notably in some inaccessible corners of Wild Moor. In the past there would have been M29 soakways on many of the mosses, but we have no recent evidence of this.

M35 *Montia fontana* rills occur on the Long Mynd, in the highest flushes at the top of Carding Mill Valley and at Boiling Well.

M36 *Chrysosplenium oppositifolium* springs occur in light shade in W8 *Fraxinus excelsior* woods or in the open at the heads of valleys throughout the hills. Notable stands occur at Poles Coppice and Bushmoor Coppice.



Locations of quadrats in mires

## Mesotrophic grassland

MG1 *Arrhenatherum elatius* grassland is very common on roadside verges, around edges of fields and in neglected grassland throughout the county. It has a number of subcommunities: the MG1b *Urtica dioica* one is particularly rank and is found on railway embankments and road verges; MG1c *Filipendula ulmaria* is damper and is recorded on river banks, alongside canals and on wet woodland tracks; MG1e *Centaurea nigra* is simply a neglected form of MG5 grassland.

MG4 *Sanguisorba officinalis* flood meadows are very rare, being recorded only at Lord's Meadows near Albrighton.

MG5 *Festuca rubra* is the classic species-rich hay meadow community in this part of the country. There are possibly hundreds of such meadows scattered throughout the county, wherever the grassland has not been improved too much. New grassland in abandoned quarries and sown grasslands can quickly turn into MG5, although they tend to contain a lot of ruderal species. There are several SSSIs designated for their MG5, such as Derrington and Stocking Meadows. All three subcommunities are common: MG5a *Lathyrus pratensis* is on neutral soils whereas MG5b *Galium verum* occurs on slightly base-rich and MG5c *Danthonia decumbens* on the more acid substrates. A good place to see it is at Ropewalk Meadow in Coalbrookdale.

MG6 *Cynosurus cristatus* is possibly the most abundant habitat in the county, making up much of the sheep and cattle pasture throughout the county. It can be quite species-rich and the dividing line between MG5 and MG6 can be unclear; but often it is quite a dreary habitat. A good place to see it is in Beck's Field in Shrewsbury, where some of its specialities such as *Saxifraga granulata* occur.

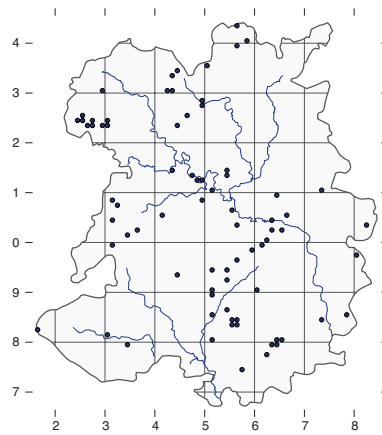
MG7 *Lolium perenne* is the most agriculturally improved grassland type, often being nothing more than a uniform ley of a vigorous ryegrass cultivar. The eroded, more species-rich MG7e *Plantago lanceolata* subcommunity has been recorded with *Vicia lathyroides* in it at Rudge (Trueman, 1981).

MG8 *Caltha palustris* occurs at Crose Mere, Melverley Farm, Morton Pool, Ruewood Pastures and a few other places throughout the county. In these sites it is a species-rich community of some importance, but it is also fairly widespread in wet grassland in slightly shady conditions, along streams and in flushes throughout.

MG9 *Deschampsia cespitosa* is a tussocky, typically ungrazed grassland on damp soils. It is widespread throughout, although often in small quantities. There are records for Cole Mere, a roadside verge at Hill Houses, at Oss Mere (where there is an expanse of several acres), and in a glade in Easthope Wood.

MG10 *Holcus lanatus* is widespread in damp pastures, on the edges of pools and even on badly drained roadside verges. Good places to see it include around some of the meres, especially Brown Moss, and Ruewood Pastures, which is typical of this formerly extensive grassland community. It can vary from quite species-rich to very poor, and is therefore of little significance for conservation.

MG13 *Alopecurus geniculatus* is another community of seasonally inundated grassland in pastures, on road verges, woodland rides and the margins of pools. It is perhaps best seen at Fenemere and Brown Moss, but small stands of it are found in fields throughout the plain.



Locations of quadrats in mesotrophic grassland

## Open Vegetation Communities

OV10 *Senecio vulgaris* weed community occurs on disturbed ground in arable fields, as at Eudon George and Lower Faintree, or on waste ground as at Newport and Shifnal (both Trueman, 1981). It is widely scattered throughout the lowlands.

OV13 *Capsella bursa-pastoris* has been recorded on a road verge at Priorslee (Trueman, 1981) and an arable field in Upton Cressett. It is common in ploughed fields, in bare patches in grass leys and on disturbed verges.

OV14 *Urtica urens* is an arable weed community typical of sandy soils, most common in the east of the county. It has been recorded in fields at Edgmond, Rudge Heath (both Trueman, 1981) and at The Sands. At Prees Heath it sprang up with particular vigour when the fields were deep-ploughed in an attempt to recreate heathland.

OV15 *Anagallis arvensis* is typical of free-draining arable fields in the lowlands, especially in the east of the county. It is quite widespread, but the only records of it are from a field margin at Filletts Farm in 2010, where *Kickxia elatine* occurred in abundance.

OV18 *Polygonum aviculare* occurs in arable fields and on disturbed or

trampled soils elsewhere. Our only record of it is from a field margin at Edgmond (Trueman, 1981).

OV19 *Tripleurospermum inodorum* is found on road verges and other disturbed soils. Trueman (1981) recorded it on a roadside at Tong in 1981, and it is widespread in small patches throughout the county. In recent years it has become one of the main communities on ploughed and sprayed fields at Prees Heath.

OV20 *Sagina procumbens* is typical of damp wall-tops, pavements and untrampled corners of cobbled streets. There are samples from ruins at Haughmond Abbey (Trueman, 1981) and various places around Shrewsbury. It is common and widespread.

OV21 *Plantago major* is tolerant of trampling, so it occurs along paths and tracks. The only sample we have of it is from a garden in Pant (Trueman, 1981).

OV22 *Taraxacum officinale* is an open grassland vegetation of disturbed but not heavily trampled soils. It has been recorded in a sand quarry at Buildwas (Trueman, 1982) and on the ruins at Viroconium.

OV23 *Dactylis glomerata* occurs throughout the county on road verges and in amenity grassland, where it is usually sown and mown only occasionally. It is recorded quite widely, on verges at Cosford, Shipley, Uppington (all Trueman, 1981), Monkmoor and Shelton, and in Dorrington Sand Quarry (Trueman, 1981) and waste ground at Newport (Trueman, 1981).

OV24 *Urtica dioica* is the one that occurs on river banks where there is almost complete dominance of nettle although sometimes it is now displaced by *Impatiens glandulifera*. We have samples from it on the floodplain of the Severn by the English Bridge and, in a rather different habitat, on the edge of



## Vegetation Communities

patches of scrub at Abbot's Castle Hill (Trueman, 2005).

OV25 *Cirsium arvense* is found on arable field margins and neglected corners of grassland. It is dominated by thistles with nettles and other tall herbs. Our samples are from Kingshead near Bromfield and Norton in Stockton parish.

OV26 *Epilobium hirsutum* is common in the floodplains and on the banks of rivers, and it occurs throughout the lowlands in damp meadows, around meres and in roadside ditches. The OV26c *Filipendula ulmaria* subcommunity has been recorded at Berrington Pool (M.J. Wigginton, 1979).

OV27 *Chamerion angustifolium* is found along railway lines and in cleared woodland on acid sandy or peaty soils throughout. It is particularly abundant at Prees Heath and Old Oswestry.



OV27 *Chamerion angustifolium* at Marl Allotment, Whixall Moss.

OV30 *Bidens tripartita* is the first of four communities that occur on bare mud or thinly vegetated margins of meres, ponds and rivers. It is fairly ephemeral, but in sites with fluctuating water levels there are always patches present. It is known around most of the meres, especially Brown Moss, and on mud banks along rivers such as the Severn at English Bridge, Shrewsbury.

OV31 *Rorippa palustris* is very similar but is only recorded so far around meres and pools such as Brown Moss, Fenemere (M.J. Wigginton, 1979) and Venus Pool.

OV32 *Ranunculus sceleratus* occurs on more eutrophic soils around meres, pools and rivers. It is recorded at Crose Mere, Oxon Pool, White Mere and by the Roden at Tilley, but it also occurs elsewhere in patches on seasonally inundated soils in pastures in farmland.

OV35 *Lythrum portula* is a community of low-nutrient water margins. It is only recorded at Brown Moss, Llyn Rhuddwyn and Newton Mere but might be found at higher altitudes as well. It is of high conservation value for a variety of uncommon species, including *Elatine hexandra* and *Littorella uniflora*.



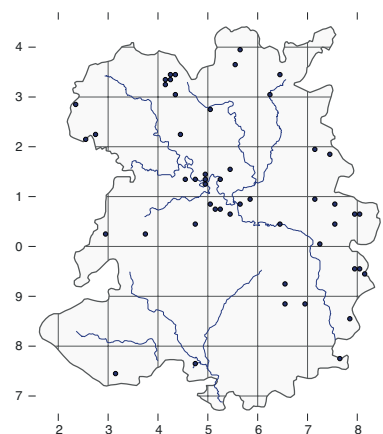
OV35 *Lythrum portula* vegetation on the drawdown zone around Pool 6 at Brown Moss

OV37 *Festuca ovina* is an impoverished vegetation type that develops on spoil heaps in upland areas. There was some evidence of it at Snailbeach (Trueman, 1981) but the spoil heaps have been landscaped and reseeded, so the vegetation may have changed.

OV39 *Asplenium trichomanes* is found on damp walls throughout, and on a few natural rock outcrops. Trueman (1981) recorded it at Holloway Rocks, at an altitude of 380 m (SO313742).

OV41 *Parietaria judaica* occurs on walls in towns, and is widespread although neglected by recorders.

OV42 *Cymbalaria muralis* is also a wall community, frequent in the towns, and again unrecorded.



Locations of quadrats in open vegetation

## Swamps

S3 *Carex paniculata* swamp is a transitional community that typically occurs on the edge of W5 *Alnus glutinosa* woodland. Its classic locality is at Sweat Mere, where it was described by A.R. Clapham in 1939, and it has since been recorded at Fenemere (C. Walker, 1988) and Marton Pool, Chirbury. One feature of interest is the epiphytes that occur on the sedge tussocks, and the role these can play in successional processes in flooded sites.

S4 *Phragmites australis* reedbed is the more species-poor of the reedbeds, often consisting of little more than dense stands of Common Reed with a few associates. There are samples from Fenemere, Oss Mere and Sweat Mere (all by M.J. Wigginton, 1979) and it is quite widespread in meres, canals, rivers, ditches and damp fields.

S5 *Glyceria maxima* swamp occurs by rivers and canals, sometimes taking over damp, neglected fields in the floodplain of the larger rivers. The only sample is from Blake Mere, where it has colonised from the adjacent Llangollen Canal: it is not a natural part of the mere vegetation as it is a community of eutrophic mineral soils.

S6 *Carex riparia* swamp is typically made up of almost pure stands of this species, mostly on peaty damp

soils around the meres and mosses and sometimes in river basins. It is not common, and has been sampled only at Blake Mere (M.J. Wigginton, 1979) (although it is no longer there) and Fenemere. It also occurs around Sweat Mere and possibly along the Montgomery Canal.

S7 *Carex acutiformis* is similar to the above but rather more common. Our samples are all from the Old River Bed in Shrewsbury, where it is the main vegetation type, but it also occurs along canals, in the flood-plains of lowland rivers and around the meres.

S8 *Schoenoplectus lacustris* swamp has not been sampled, but may be found in some of the meres and some rivers, most notably the Roden.

S9 *Carex rostrata* occurs in low-nutrient waters or on peat in places like Berrington Pool and Wildmoor Pool (Trueman, 1981). It is not particularly species-rich but is of high conservation value as a community of unpolluted sites.



S9 *Carex rostrata* swamp in Wildmoor Pool



S10 *Equisetum fluviatile* swamp at Long Pool, near the Bog, Stiperstones (D.H. Wrench)

S10 *Equisetum fluviatile* is also a community of unpolluted water in places like Berrington Pool (M.J. Wigginton, 1979) and the Old River Bed, Shrewsbury. There used to be a good stand in one of the

pools at Brown Moss, but it scrubbed over, and there is still a patch of it in a ditch at the Moors, Ellesmere.

S11 *Carex vesicaria* can be quite a transitory community, usually on peaty soils in open areas or light shade. Our only sample is from the Long Bog at Berrington in 2010, shortly after the scrub was cleared.

S12 *Typha latifolia* is sometimes indicative of more eutrophic conditions, but it can occur in quite oligotrophic situations, especially the S12d *Carex rostrata* subcommunity, which is known at Berrington Moss, Brownheath Moss and Shelve Pool (Trueman, 1981). It is recorded at Battlefield Pond, a pond near Black Coppice, at Brown Moss and in numerous other locations.



A pond on Old Oswestry hillfort, filled with S12 *Typha latifolia* swamp

S13 *Typha angustifolia* consists of almost pure stands, either in oligotrophic pools such as Bomere Pool, Marton Pool, Chirbury and Fenemere (M.J. Wigginton, 1979) or sometimes in peat bogs, as at Black Coppice.

S14 *Sparganium erectum* is found on the edges of rivers and around ponds, usually in eutrophic situations. It is recorded at Berrington Pool, Betton Pool (M.J. Wigginton, 1979), Brown Moss, Castle Pools, Telford (Trueman, 1981), Kettle Mere, in one pool on Old Oswestry, and by the Severn at Buildwas (Trueman, 1981).

S17 *Carex pseudocyperus* occurs in open woodland and muddy shorelines on peaty soils around

the meres, and sometimes it flourishes when trees are removed (or drowned by flooding). Our samples are from Oxon and Shrawardine pools.

S18 *Carex otrubae* is characteristic of the margins of canals, where it typically forms a narrow strip of vegetation on the edge of the water. It sometimes also occurs on damp road sides and the edges of tracks, as at The Speller.

S19 *Eleocharis palustris* is found in meres such as Bomere Pool and in ponds throughout, although it has not been sampled during the current survey.



S19 *Eleocharis palustris* swamp at Eardington Plant Quarry (D.H. Wrench)

S22 *Glyceria fluitans* consists of floating mats on ponds and the edges of lakes and canals such as the Coalport Canal (Trueman, 1981). It is widespread in the county. Where other species of *Glyceria* or floating plants such as *Apium nodiflorum* occur, it is S23 'water-margin vegetation', but they could just as easily be treated as subcommunities.

S24 *Calamagrostis canescens* is the most species-rich of the reedbed communities, present only around some of the more base-rich meres. Our only samples are from Fenemere (Wigginton, 1979 & Lockton, 2003) and Oss Mere (Wigginton, 1979).

S26 *Phragmites australis* is the more eutrophic of the reedbed communities, characterised by abundant *Urtica dioica*. It occurs around Fenemere, Marton Pool (Chirbury), Oss Mere, Sweat Mere (M.J. Wigginton, 1979) and Top



## Vegetation Communities

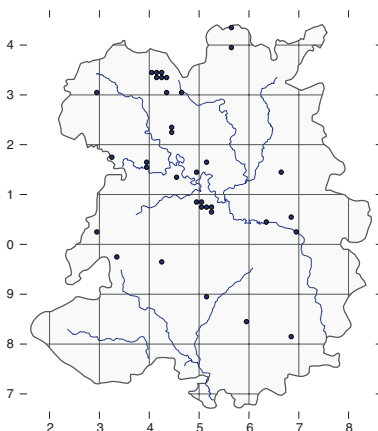
Pool, in abandoned canals such as the Shrewsbury Canal at Wappenshall, and in ditches such as the one draining Cole Mere.

S27 *Comarum palustre* is a community of oligotrophic sites, usually on peaty soils, and is found at many of the meres and mosses, including Berrington Pool, Bomere Pool, Brown Moss (Trueman, 1983), Shomere (M.J. Wigginton, 1979), Shrawardine, Snipe Bog, and at the Moors, Ellesmere. *Comarum palustre* is highly characteristic of this community.



S27 *Comarum palustre* at the Moors, Ellesmere

S28 *Phalaris arundinacea* is a tall grassland community found on the edges of rivers, in ditches on farmland, as at Hendre, and around meres such as the Mere, particularly in eutrophic sites.



Locations of quadrats in swamp communities

## Upland grassland

U1 *Rumex acetosella* is one of the most characteristic habitats in the county, being found on many of the hills on south-facing slopes, especially over Longmyndian shales. The dominant grass is often *Festuca ovina*, but *Aira praecox* and

*Agrostis capillaris* are also common. A lowland equivalent used to occur on sandy agricultural soils, but it has largely disappeared except at Attingham Park and Prees Heath. Some of the more interesting examples of U1 occur at Rabbit Warren, at the southern end of the Long Mynd, on Earl's Hill and on Abbot's Castle Hill.



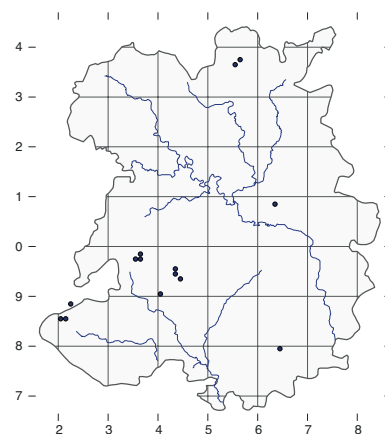
U1 *Rumex acetosella* sward on Earl's Hill

U2 *Deschampsia flexuosa* is found on base-poor soils, mainly on the hills. Our samples are from Brown Moss and the Bog (Trueman, 1981), and a good place to see it is on Earl's Hill.

U4 *Agrostis capillaris* is the most common grassland type on the hills, with samples from Brown Clee, at Cwm Collo, Rhos Fiddle, Shelve (Trueman, 1981), the Long Mynd and Westcott Hill (Trueman, 1981).

U5 *Nardus stricta* is also very common on the hills, with samples from Rhos Fiddle, the Stiperstones and Titterstone Clee (Trueman, 1981 and A.K. Thorne, 1999). It is much less common in the lowlands, although there are patches of it in places like Brown Moss.

U20 *Pteridium aquilinum* is the main bracken-dominated community on the hills, where it has usually invaded U4 or U5 grassland. It has been sampled at Gogbatch (C.M. Owen, 1983), Perkins Beach and Titterstone Clee (A.K. Thorne, 1999).



Locations of upland grassland quadrats

## Woodland

W1 *Salix cinerea* is one of the most species-poor woodland types. It often consists of little more than shrubs of *S. cinerea* in a water-filled hollow or around the edge of a mere, with a few epiphytic mosses and ferns. *Salix cinerea* is the only tree that is able to grow standing in water all year round. It is mostly found around the meres and in other small glacial hollows, but there are also stands along rivers and even on hills, such as Haughmond Hill, where drainage is impeded. It is a community of little ecological value, especially as it tends to invade pools and shade out the aquatic and marginal vegetation. One rare species that is restricted to W1 woodland is *Riccia canaliculata*, which grows on organic mud created by the decomposition of *S. cinerea* leaves in the main pool at Brown Moss.



W1 *Salix cinerea* carr at Newton Bog

W2 *Salix cinerea* is distinguished from W1 by a richer herb layer and a more diverse canopy, often with birch. It is typical of reedbeds with base-rich surface water inundation,



usually in river valleys. It also occurs where surface water covers a formerly raised mire, as has happened at Shrawardine Pool, Alkmund Park Pool and Top Pool. A variant made up largely of *S. alba* in a swamp of *Carex riparia* occurs at Park Hall, and in the Old River Bed the herb layer is *Carex acutiformis* with shrubs of *S. cinerea*.

W4 *Betula pubescens* woodland is part of the natural succession on raised mires, and many of the best mosses in the county are now largely overgrown with this community. In its initial stages the mire retains a *Sphagnum* lawn (the W4c *Sphagnum fimbriatum* subcommunity) but as it becomes drier it succeeds to the W4a *Dryopteris dilatata* subcommunity. Samples have been recorded at Bomere Pool, Brown Moss, Calcott Moss, Haughmond Hill, Lin Can Moss, Shomere, Sweat Mere (Trueman, 1980) and Wem Moss, and although it is mainly found in the mosses, it occurs on peaty soils on the hills as high as the Stiperstones.



W4c *Sphagnum fimbriatum* woodland at Black Coppice

W5 *Alnus glutinosa* is arguably one of the habitats with the highest conservation value in the county, especially in places where the characteristic *Carex paniculata* is replaced by *C. elongata*. It is largely confined to the margins of the meres, where it grows on *Sphagnum* peat following partial drainage, so the base-rich water of the meres inundates the mosses and creates the unusual conditions necessary for the development of this species-rich woodland. It has a rather open canopy and an often dense ground flora in shallow standing water. It generally requires

a fluctuating water level, and in most of the meres it is disappearing as the water levels have been stabilised to prevent flooding.

With drainage and nutrient enrichment, W5 turns to a species-poor type of W6 with abundant *Urtica dioica* if the ground is dry enough. Alternatively it can succeed naturally to W10 *Quercus robur* woodland with a ground flora made up almost entirely of *Dryopteris dilatata*.



W5 *Alnus glutinosa* carr at Sweat Mere

W6 *Salix* × *fragilis* is a more eutrophic woodland that occurs on rich silt in the floodplains of the main rivers. It is typically dominated by either alder or willow. In the summer the ground flora is sparse and often dominated by *Urtica dioica* or, increasingly, *Impatiens glandulifera* but in the spring it is rich and varied.

The most common type is W6a, dominated by *Alnus glutinosa*, which occurs around many of the smaller rivers, lowland springs and around some of the meres, where there has been surface water runoff into former W5 woods. The W6b *S. × fragilis* subcommunity is found mainly in the lowlands by large rivers such as the Vyrnwy and Severn; in some places the willow is replaced by *Populus* × *canadensis* plantations. W6d *Sambucus nigra* is also mainly lowland, often as fragmentary stands in pasture land. W6e *Betula pubescens* subcommunity occurs on drying peatlands, such as Brown Moss, mainly dominated by oak, birch and alder with a very sparse ground flora.

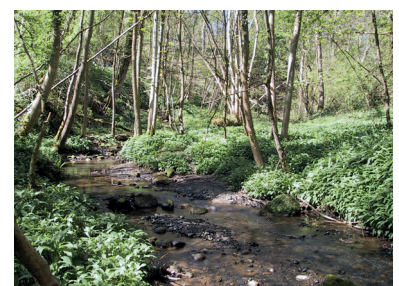
W7 *Lysimachia nemorum* is the upland extension of W6 alder woodland on the more base-rich soils.



W6a *Alnus glutinosa* woodland at The Alders, Wollaston

It is less eutrophic and occurs where the valleys are narrower but there is still some flooding and silt deposition. It has been recorded in the upper parts of the Habberley Brook from about Earl's Hill up to Brook Vessons, Birchen Park, below the Ercall (Trueman, 1981), Fastings Coppice and Limekiln Wood (Trueman, 1981). It is usually found as quite a narrow band within W8 ash woods, and often it occurs in very small patches, which share much of the canopy of the adjacent drier wood.

W8 *Fraxinus excelsior* is one of the two main climax woodlands, being common on most of the base-rich soils. It also accounts for many of the more species-rich patches of scrub and hedges. Good examples are found on Llynclys Hill, Wenlock Edge, Benthall Edge and in the lower Severn valley. In ancient woods the most common subcommunity on dry soils is W8e *Geranium robertianum*, with W8f *Allium ursinum* typically on flushed slopes and W8c *Deschampsia cespitosa* on wetter soils. The W8d *Hedera helix* subcommunity is typical of secondary woods and places where the tree cover has been thinned by disturbance or, sometimes, by natural factors such as Dutch Elm Disease.



W8 *Fraxinus excelsior* woodland at Loamhole Dingle

## Vegetation Communities

W9 *Sorbus aucuparia* is the upland equivalent of W8, on the edge of its range in Shropshire. The only really convincing example of it is in Betchcott Hollow, although it is often mistakenly recorded by surveyors because *S. aucuparia* is one of the species that distinguishes the two communities; but this is a widespread and increasingly common tree, and its presence should not be taken as necessarily indicating this upland community. W9 woods have permanently damp and humid conditions, with wetland plants such as *Athyrium filix-femina* frequent in the ground flora.

W10 *Quercus robur* is the most common type of woodland in the county. It occurs on neutral to acid soils throughout, and even in limestone areas such as Wenlock Edge it is common on flat ground where the soil is deeper. In many places the dominant tree is not Pedunculate Oak, but *Quercus petraea* or *Q. × rosacea*, and many W10 woods are now replanted with conifers, ash or beech. Good examples of W10 occur in the Wyre Forest, on Haughmond Hill and at Bannister's Coppice.

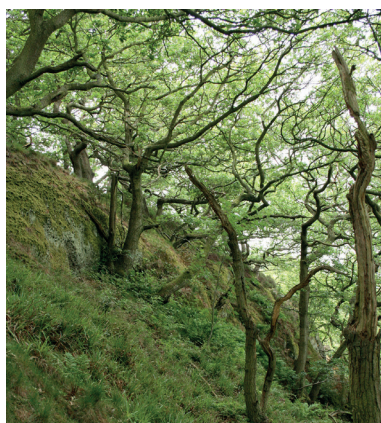
W16 *Quercus petraea* is found on the more acid soils throughout, typically in the uplands but also on peat on drained mosses. In the latter situation it is sometimes very species poor, with little more than oak (*Q. robur* as likely as *petraea*), *Betula* and *Deschampsia flexuosa*, but in the uplands it is a more valuable community, grading into W17. Good examples occur in Oaks Wood, Poles Coppice (Trueman, 1981), Sowdley Wood



W16 *Quercus petraea* woodland at Oaks Wood

and the Ercall. It was also the main vegetation at Clarepool Moss until the woodland was cleared in 2007.

W17 *Leucobryum glaucum* is the more upland of the acid oak woods, being very rare on the hills on north-facing slopes and in sheltered valleys. Its most distinctive feature is the bryophyte-rich ground flora, with hummocks of *L. glaucum* and *L. juniperoideum* sometimes achieving a metre or more in height. The best example was at Oaks Wood, where the hummocks were possibly hundreds of years old, but they largely disappeared in 2004 when the wood was partially cleared.



W17 *Leucobryum glaucum* woodland on the upper slopes of Oaks Wood

W21 *Crataegus monogyna* scrub is very common in neglected corners of fields and creeping up the slopes of hills, as on Earl's Hill and Haughmond Hill. It also forms the vegetation of many hedges, especially the more species-poor ones recently planted on formerly cleared land. This community often succeeds to W8 *Fraxinus excelsior* woodland, and the boundary or distinction between the two can be very indistinct, either in species-poor woodland or hedges with a richer ground flora.

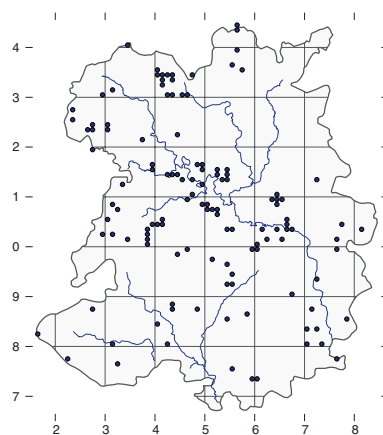
W22 *Prunus spinosa* is very common in thickets and hedges throughout, although it does not attract much attention and we have no quadrats from it. It is characteristic of the succession from open grassland or arable fields to W10 *Quercus robur* woodland.



W22 *Prunus spinosa* scrub at the foot of Haughmond Hill

W23 *Ulex europaeus* scrub is the equivalent of W21 on the more acid, heathy soils. It is very distinctive on Old Oswestry, where it is notable as the habitat for *Orobancha rapum-genistae*. It is found on the slopes especially of Longmyndian hills and it forms hedges in many upland areas and in the sandy lowlands, as along roadsides (with W24) at Mellin-y-Grogue. Typically it will succeed to W16 *Quercus petraea* woodland.

W24 *Rubus fruticosus* underscrub occurs on neutral, often rather damp, soils where it is the precursor to W10 *Quercus robur* woodland. Like the other types of scrub, it can be difficult to draw the boundary between it and woodland – a patch of beech wood at High Rock, Bridgnorth, recorded by Trueman in 1981, matches W24 better than any woodland community, possibly because the ground flora is sparse and grassy. Again it is common in hedges, along roadsides and field edges by hedges, and in neglected grassland or felled woodland throughout.



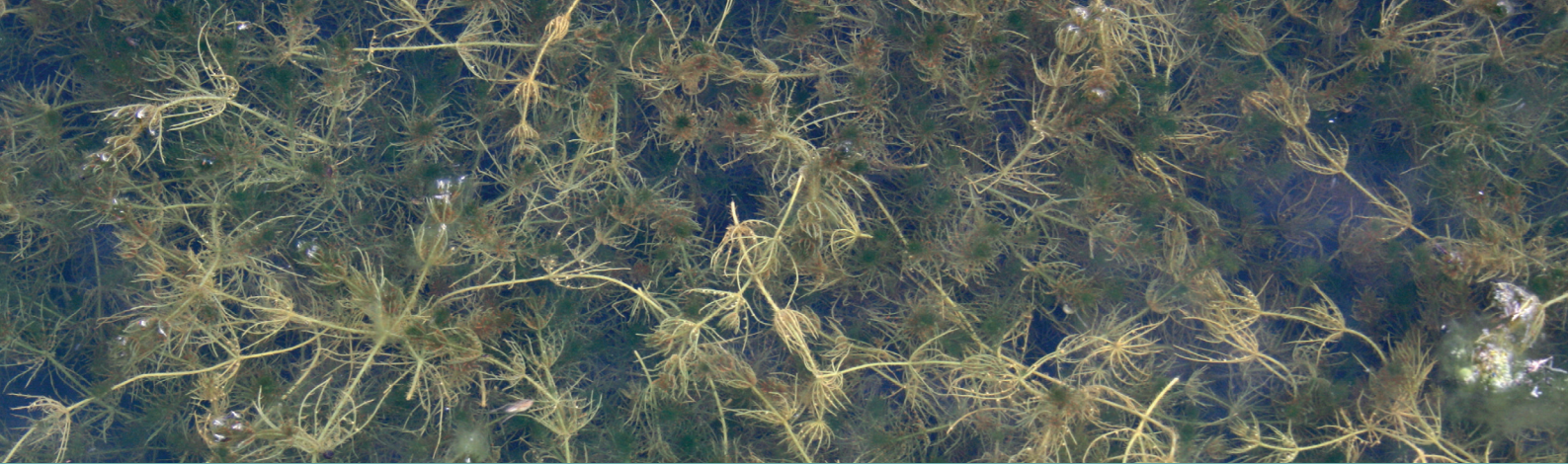
Locations of woodland quadrats





# SPECIES ACCOUNTS





# Stoneworts

***Chara aspera*** Dethard. ex Willd.

## Rough Stonewort

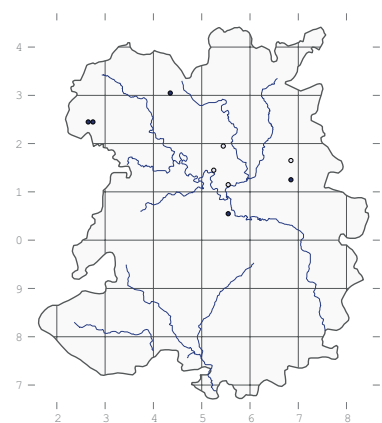
First record: Leighton, 1840, Cole Mere (BM).

There are just four records: following Leighton's find, R.M. Serjeantson collected it at Church Preen in 1879 (SHY); W. Phillips collected it at Berrington Pool in 1881 (SHY); and Serjeantson and W.E. Beckwith collected it from a pool at Acton Burnell in 1882 (BM, SHY). In Britain it has a distinctly coastal and northern distribution, but it is still recorded in the Midlands and it might well turn up again.

***Chara contraria*** A. Braun ex Kütz.

## Opposite Stonewort

First record: W.E. Beckwith, 1881, Shrewsbury Canal at Upton Magna (BM).



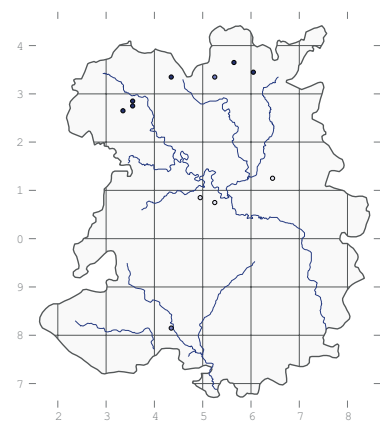
In base-rich pools in quarries such as Dolgoch (1998), Llyncllys and Cound (both A.K. Thorne, 2006) and lakes such as Crose Mere (2003) and Trench Pool (2004). In the past it was recorded

at Shawbury Heath (Beckwith, 1881) and the Newport Canal at Kynnersley (T. Butler, 1882). The var. *hispidula* A. Braun has been found in Dolgoch Quarry (SJ277247, 1998, det. N.F. Stewart, BIRM).

***Chara globularis*** Thuill.

## Fragile Stonewort

First record: W. Phillips, 1870, Berrington Pool (SHY).



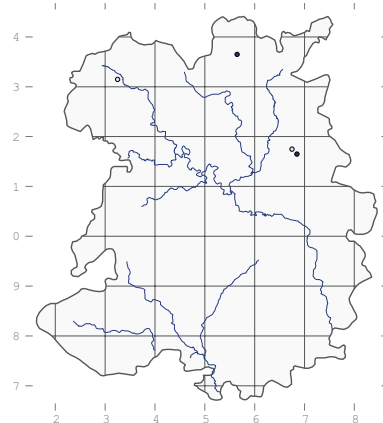
One of the more common and widespread charophytes, but rarely recorded in Shropshire. There are records for it in three places in the Montgomery Canal in the 1990s (all by R.V. Lansdown), before much of it was re-opened to boat traffic. Otherwise it has been found in three ponds at Aychley Farm, (J. Edwards, 1998, det. N.F. Stewart) and in Cole Mere (B. Goldsmith, 2004, det. Stewart). There are older records for it at Wellington Reservoir (H.E. Forrest, 1890), Bomere Pool (G.C. Druce, 1908), Quina Brook and Stokesay Castle (both M. Wainwright, 1983, det. J.A. Bryant).

***Chara hispida*** L.

## Bristly Stonewort

First record: Williams, 1800, 'ditch by the side of the road a few hundred yards beyond Wall towards Kynnersley, June 1800.'

Just two current sites: a recently dug fishing pond on Kynnersley Moor (SJ687167, 2009, BIRM) and a newly created pool on Prees Heath (SJ561367, S. Lewis, 2011). It was also once recorded at Whittington (A. Ley, BM).



***Chara rudis*** (A. Braun) Leonh.

## Rugged Stonewort

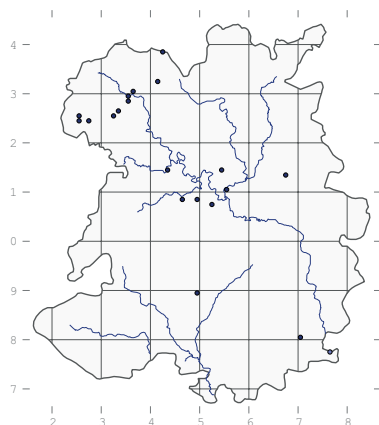
First record (as *C. hispida* var. *rudis*): J.E. Bowman, c. 1841, 'west margin of Crosemere Mere' (SHY).

There are just four records, none with recent verification. Hamilton (1909) reports that it was found at Rushbury Station in 1880; H.F. Parsons collected it at Crose Mere in 1884 (det. H. & J. Groves); and G.C. Druce recorded it at Bomere Pool in 1908.

***Chara virgata* Kütz.****Delicate Stonewort**

First record: J.S. Henslow, 1832, Berrington Pool (det. N.F. Stewart, RAMM).

One of the commoner species, tolerant of a wide range of pH. It was widespread in the Montgomery Canal in the 1990s (R.V. Lansdown), but has not been seen there since navigation was reintroduced. It also grows in pools at Dolgoch Quarry, Haughmond Hill, Hortonwood, Nantmawr Quarry and Preston Montford. There were several records for Berrington Pool in the 19<sup>th</sup> century and it turned up there again in 2003. Other recent sites include a farm pond at Lythwood (I.S. Thompson, 2001), Crynos Farm (P. Nicolet, 2002), Treflach Quarry (S. Swales, 2003), White Mere and Bomere Pool (both B. Goldsmith, 2004), and Attingham Park (N.F. Stewart, 2006).

***Chara vulgaris* L.****Common Stonewort**

First record: Williams, c. 1800, 'ponds and ditches, common.'

In a wide variety of base-rich waters including calcareous flushes in places such as Trefonen Marshes and Cramer Gutter where there is barely any depth of water. Most records are for the limestone areas around Wenlock Edge, the Oswestry Uplands and Titterstone Clee, but it is also found in less calcareous habitats in the north Shropshire plain. A good place to see it is in Lilleshall Quarry on Wenlock Edge. The var. *longibracteata* (Kütz.) J. Groves & Bull.-Webst. has been recorded at Ellesmere (W.E. Beckwith, 1882, det. N.F. Stewart, DBN, NMW) and Condovery Quarry (D.H. Wrench, 2004, det. Stewart, BIRM); and the var. *papillata* Wallr. ex A. Braun in the Coalport Canal (Trueman, 1981, det. J.A. Bryant), and Lilleshall Quarry (SO577969, 2005, det. Stewart, BIRM).

***Nitella flexilis* (L.) C. Agardh****Smooth Stonewort**

First records (as *Chara flexilis*): Williams, c. 1800, 'Berrington pool, Whitemere, Betton pool, Bomere pool, Hancott pool, Shrawardine pool; var.  $\beta$  major, Eaton Mascott pool.'

Occasional in the Montgomery Canal and in various meres, including Bomere Pool, Brown Moss and Cole Mere. Also in pools and ponds such as an ornamental stone-lined pond in the Dingle in the Quarry park, Shrewsbury (D.H. Wrench, 2010) and in one of many small pools on Wild Moor (SO417960, 2012, BIRM).

***Nitella gracilis* (Sm.) C.**

Agardh

**Slender Stonewort**

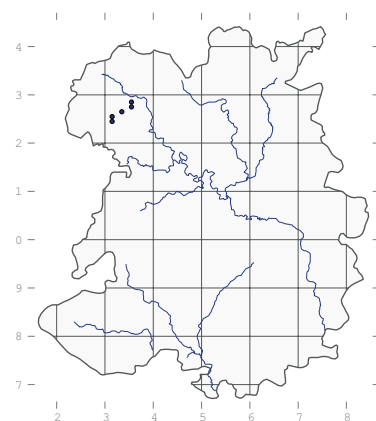
Collected by W.E. Beckwith in 1890 in 'a small, deep pool about 1/12<sup>th</sup> of an acre in extent' at an undisclosed location (BM).

***Nitella mucronata* (A. Braun)**

Miq.

**Pointed Stonewort**

In various places in the Montgomery Canal, where it was first recorded in 1997 by R.V. Lansdown.

***Nitella opaca* (C. Agardh ex**

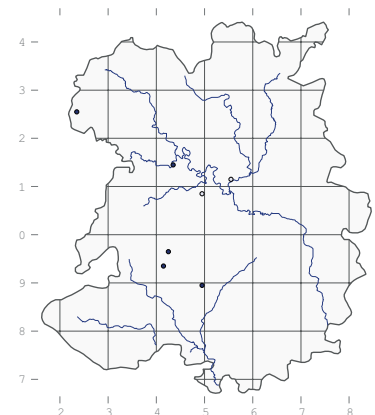
Bruzelius) C. Agardh

**Dark Stonewort**

First record: W. Phillips, 1881, 'Shrewsbury Canal at Upton Magna' (SHY).

Recorded recently in Wildmoor Pool (1999, BIRM), a pond near Pentre (SJ234256, 1999, BIRM), a pool at the top of Ashes Hollow (A.K. Thorne, 1999, BIRM), Preston Montford (2002, BIRM) and Eaton under Heywood (SO493893, R.G. Thorne, 2009) (all det. N.F. Stewart). In Groves & Groves (1880) it is listed as known in Salop – which might have been an earlier record by W. Phillips for the

Shrewsbury Canal. The only other record is from Bomere Pool (G.C. Druce, c. 1908).

***Nitella translucens* (Pers.) C.**

Agardh

**Translucent Stonewort**

Just three records: Shawbury Heath (Anon, 1856, det. H. & J. Groves, BM), Paynsbrook, Shawbury (R.M. Serjeantson, 1882, SHY) and Tong Castle (W.H. Painter, 1897).



Berrington Pool – one of the most important sites for charophytes



*Chara hispida* on Prees Heath





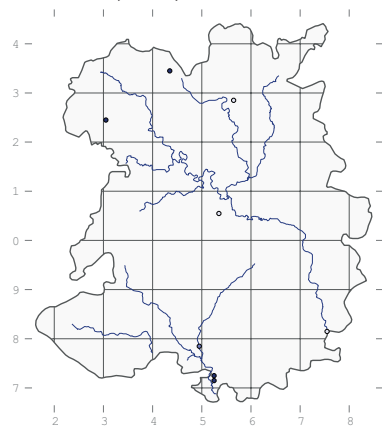
# Bryophytes

## Hornworts

### *Anthoceros agrestis* Paton Field Hornwort

First record (as *A. punctatus*): Williams, c. 1800, 'upon the rocks under the wall round Weston Chapel, Hawkstone, and by the side of the ditch in the meadow at Eaton [Mascott].'

In fields near Clarepool Moss (M.E. Newton, 1993), at High Meadow Farm (M. Lawley, 2002) and at Morton Hall Farm (SJ301240, 2003). There are older records from Severn Lodge (J.B. Duncan, 1909), Stanton Lacy (E. Armitage, 1925), and there are dots in the bryophyte atlas (Hill, Preston & Smith 1991) for SJ61 and SO39.



### *Phaeoceros laevis* (L.) Prosk. Smooth Hornwort

Just one record: at Stanton Lacy in 1925 (E. Armitage).

### *Phaeoceros carolinianus* (Michx.) Prosk.

#### Carolina Hornwort

A rare arable plant, recorded only at High Meadow Farm (SO519721, J. Ricketts, 2002, det. T.H. Blackstock and S.D.S. Bosanquet, BBSUK).

## Liverworts

### *Blasia pusilla* L. Common Kettlewort

'In wet hollows made by horses' hooves along the main path through Lionlane Wood' (E.A. Wilson, 1949), at Alberbury (M.E. Newton, c. 1980) and in two places on Brown Clee (M. Lawley, 2007 and D.A. Callaghan, 2014). This is a weedy species of constantly wet open soil or stony ground, often by forestry banks or ditches.

### *Lunularia cruciata* (L.) Dumort ex Lindb.

#### Crescent-cup Liverwort

First record: Hamilton, 1903, 'garden, Cherry Orchard, Shrewsbury.'

A common weed species frequently found in urban habitats and in gardens. A typical denizen of large pot plants or damp patios. In semi-natural habitats it has been recorded in W6b *Salix × fragilis* woodland at Marton Pool, Chirbury, W7 *Lysimachia nemorum* by the Habberley Brook at Upper Vessons, and in W8 *Fraxinus excelsior* by the Borle Brook at New England.

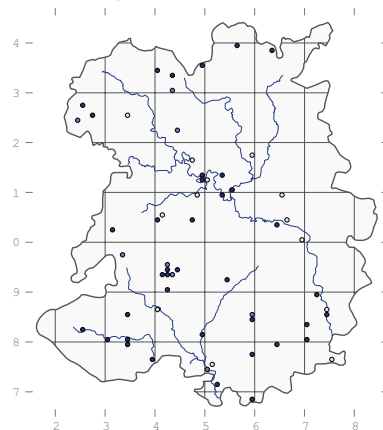
### *Marchantia polymorpha* L. Common Liverwort

First record: F. Westcott, 1842, Ludlow.

On damp soil, either in wet places by water bodies, or on badly-drained substrates such as compacted soil in gardens and hard standings. It is occasional in upland flushes such as M35 *Montia fontana* at Boiling Well (Trueman, 1980) and Lightspout Hollow (R. Tapper, 1983); OV20 *Sagina procumbens* on damp walls in Shrewsbury (M.F. Godfrey, 2011); in

W1 *Salix cinerea* woodland on the edge of the Mere; and in W5 *Alnus glutinosa* at Black Coppice, where it was abundant on wet mud in dense shade in 2010.

The ssp. *polymorpha* occurs in upland situations and has been found on an overhanging clay bank at Catherton Common and in flushes at Boiling Well (F. Rumsey, 2004). The ssp. *ruderalis* Bischl. & Boisselier tends to be the urban plant, but it has been also found on boulders in the stream at Sweeny Fen; on mud by the Severn in Shrewsbury (M.F. Godfrey, 2010); and on the Long Mynd (D.A. Callaghan, 2013).



### *Reboulia hemisphaerica* (L.) Raddi

#### Hemispheric Liverwort

First record (as *Marchantia hemisphaerica*): Williams, c. 1800, 'common.'

A strict calcicole, usually found on shaded rocks but also on calcareous soil. It has been recorded several times around Bridgnorth (originally by J.B. Duncan in 1914) and in Ashes Hollow, Rock of Woolbury (both Duncan, 1906 and 1913) and Benthall Edge (J.W. Bates, 1992).

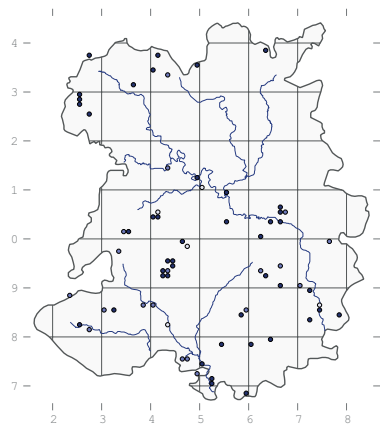


***Conocephalum conicum* (L.) Dumort.**

**Great Scented Liverwort**

First record: Hamilton, 1891, Lyd Hole.

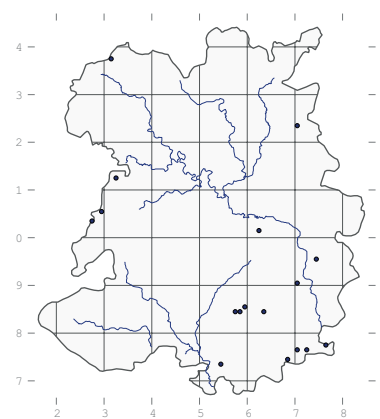
On mud or stonework by rivers and canals, sometimes entirely submerged for periods in the winter. It is frequent in the batches on the Long Mynd such as Ashes Hollow, where it was first recorded by G.G. Graham in 1961, Callow Hollow (N.G. Hodgetts, 1984), Carding Mill Valley and The Batch (both M.E. Newton, 1994). It is quite frequent along the banks of the Severn, Teme and Onny, and it does particularly well in the wooded valley of the Habberley Brook near Earl's Hill, where it has been seen many times since Hamilton recorded it there. There are a few records of it by still water, as at Eardington Plant Quarry and Shadwell Quarry (both M. Lawley, 2006). On canal banks it has been recorded by the Llangollen at Ellesmere (C.C. Townsend, 1992) and the Montgomery at Frankton (R.V. Lansdown, 1997).



***Conocephalum salebrosum* Szweyk. et al.**

**Snakewort**

First record: M. Lawley, 2005, Beech Dingle.



In similar habitats to the above; recorded in W8 *Fraxinus excelsior* woodland at Whitwell Coppice. Also

now known in several places in the Wyre Forest (L. Fraser, 2007-08) and along streams and rivers such as the River Rea at Mawley Hall (M. Lawley, 2011).

***Riccia cavernosa* Hoffm.**

**Cavernous Crystalwort**

On bare mud around drying pools in the summer. First recorded by R.G. Woods in 1998 at Dudmaston Pools and since seen only at Brown Moss (N.F. Stewart, 2004, Godfrey 2010) and Venus Pool (M. Lawley, 2006).

***Riccia fluitans* L.**

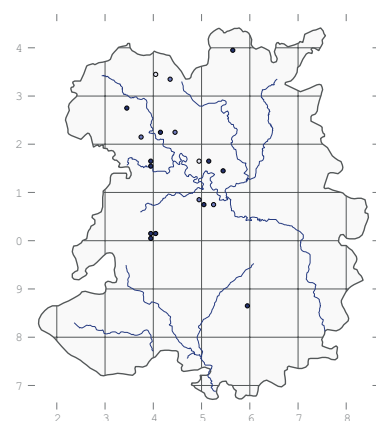
**Floating Crystalwort**

First record: W.A. Leighton, 1839, Shrawardine Pool (E).

Mostly restricted to the meres and mosses, where it appears to crop up rather sporadically.

In OV30 *Bidens bidentata* community at Brown Moss; S12 *Typha latifolia* at Shrawardine Pool and Battlefield pond; S17 *Carex pseudocyperus* at Shrawardine Pool; S24 *Calamagrostis canescens* at Fenemere; S27 *Comarum palustre* at Berrington and Bomere pools (the last three by M.J. Wigginton, 1979); W5 *Alnus glutinosa* at Cole Mere (Wigginton, 1979), Shomere and Shrawardine; and W6 *Salix × fragilis* at Shrawardine Pool.

It can be very abundant in open water or on drying mud in the summer, and it sometimes has no associates at all. At Brown Moss it has occurred regularly since Sinkers first recorded it in 1962, but not always in the same pool. Although it is typically a lowland plant, it is found as high as 520 m on Brown Clee (SO595866, D.A. Callaghan, 2014).



***Riccia canaliculata* Hoffm.**

**Channelled Crystalwort**

Rare, on organic mud on the margin of the main pool at Brown Moss. It

particularly favours periods when the willows encroach on the water, creating deep black detritus from leaf litter, where it grows in profusion in the late summer in dry years. First recorded by J.G. Duckett in 1975 (NMW) and seen many times since then. It favours relatively nutrient-poor conditions and fluctuating water levels.

***Riccia sorocarpa* Bisch.**

**Common Crystalwort**

First record: J.B. Duncan, 1908, Wyre Forest.

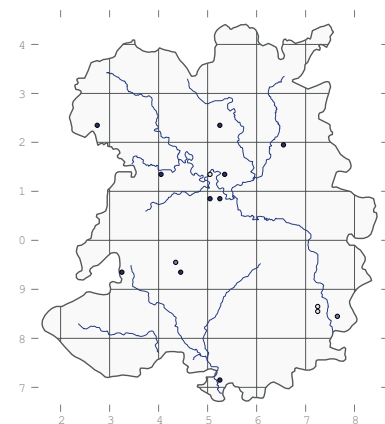
Common on bare soil in ruderal habitats and field margins. There are recent records of it on Grinshill Hill (M. Lawley, 2002), in an arable field at Ford (J.D. Sleath, 2002), at High Meadow Farm (Lawley, 2002), in an arable field at Mow Cop, and on Haughmond Hill (M.O. Hill, 2012).

***Riccia glauca* L.**

**Glaucous Crystalwort**

First record: Hamilton, Shrewsbury racecourse.

On bare ground, often in arable fields as at Ford and Lower Betton (both J.D. Sleath, 2002) or on thin soils or rock exposures on hills such as Grinshill Hill (M. Lawley, 2002) and Haughmond Hill (M.F. Godfrey, 2006). At Shray Hill it was abundant on the margins of a sandy field in 2008 (SJ65431939, det. C.D. Preston).



***Riccia subbifurca* Croz.**

**Least Crystalwort**

First record (as *Riccia commutata* var. *acrotricha*): E. Armitage, 1925, Stanton Lacy (NMW).

Just three recent records: Alberbury (M.E. Newton, c. 1980), Rock of Woolbury (M. Lawley, 1999) and in an arable field margin adjacent to Morton Pool (SJ30192406, det. N.G. Hodgetts, 2003, BIRM).

***Ricciocarpos natans* (L.)**

Corda

**Fringed Heartwort**

First record (as *Riccia natans*): Williams, 1802, Eaton Mascott Pool (BM).

There are just two current sites: Brown Moss (where it was first recorded by E.F. Warburg in 1957) and Snipe Bog (SJ5206, I. Diack, 2014). At Brown Moss it was abundant around the margins of the main pool (No. 6) in the 1990s but since then it has only been in Pool 5 most years. The only other place it has been recorded in the county is Hencott Pool, where Hamilton found it in 1890 and 1901.

***Targionia hypophylla* L.**

**Orobus-seed Liverwort**

Just two records: Williams, c. 1800, 'rock on Ponsert Hill' and J.B. Duncan, 1914, 'sandstone near Burcote, Bridgnorth.'



*Lunularia cruciata* at the English Bridge, Shrewsbury (Martin Godfrey)

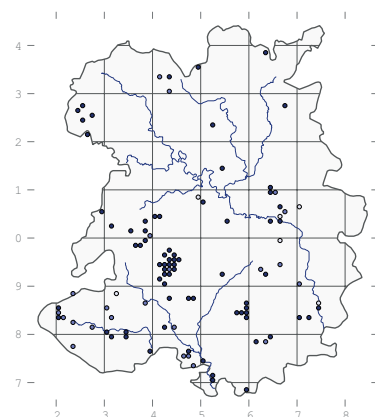


*Riccia cavernosa* at Brown Moss (Dan Wrench)

***Pellia epiphylla* (L.) Corda**

**Overleaf Pellia**

First record: L. Brown, 1730, Bishop's Castle.



A large thallose liverwort, common and abundant throughout the county where it is to be found in moist to wet habitats on neutral to acid substrates, sometimes in quite shady situations. It has been recorded in M22 *Juncus subnodulosus* at Sweeny Fen; M35 *Montia fontana* at Boiling Well (Trueman, 1980); W5 *Alnus glutinosa* at Cole Mere; W7 *Lysimachia nemorum* at Brook Vessons and the Ercall (Trueman, 1981); and W8 *Fraxinus excelsior* at the Ercall. Care needs to be taken in distinguishing this species from the following two.

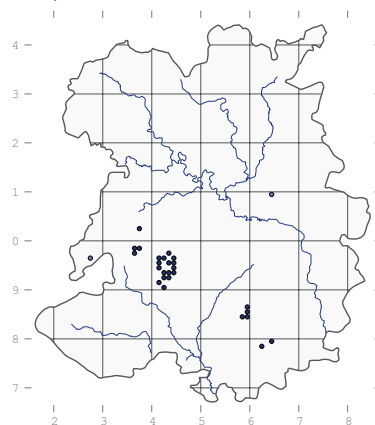
***Pellia neesiana* (Gottsche)**

Limpr.

**Nees's Pellia**

First record: J.G. Duckett, 1974, Ashes Hollow.

Widespread on the Long Mynd, where it occurs in M23 *Juncus effusus* and M35 *Montia fontana* flushes (D.A. Callaghan, 2012). Also known in other parts of the South Shropshire hills such as Catherton Common (A.R. Perry, 1995), the Stiperstones, and Brown Clee (G. Bloom, 1979). There are also records of it at Marrington Dingle and the Ercall (both M.E. Newton, 1979-1980).



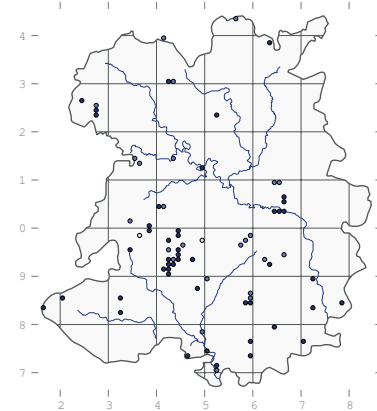
***Pellia endiviifolia* (Dicks.)**

Dumort.

**Endive Pellia**

First record (as *P. calycina*): R.D. Benson, 1899, 'Stiperstones.'

Common and abundant throughout the county where it replaces *P. epiphylla* on base-rich substrates. In the autumn and winter the two species are easy to tell apart as *P. endiviifolia* produces numerous finely divided branches at the tip of its shoots – outside these seasons identification is more problematic as both species are much alike. It is recorded in M10 *Carex dioica* on Hope Bowdler (P. Eades,



2010); M13 *Palustriella commutata* at Sweeny Fen; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979) and Trefonen Marshes; M23 *Juncus effusus* at Upper Darnford (R. Tapper, 1983) and Gogbatch (C.M. Owen, 1983); M35 *Montia fontana* in Lightspout Hollow (Tapper, 1983); and S4 *Phragmites australis* reedbeds at Oss Mere (Wigginton, 1979).

***Fossombronia foveolata***

Lindb.

**Pitted Frillwort**

Just one record, at Brown Moss (SJ5639, D.H. Wrench, 2006, conf. T.H. Blackstock, BBSUK).

All of the plants of this genus, especially the first four listed here, are very similar and can only be identified accurately by microscopic examination. They also share similar habitat requirements, usually growing on open, acidic, ground where competition is at a minimum.

***Fossombronia caespitiformis* De Not. ex Rabenh.**

**Spanish Frillwort**

Just one record, 'in an arable field at Tinker's Hill' (SJ519721, J. Wynne-Jones and M. Lawley, 2003).

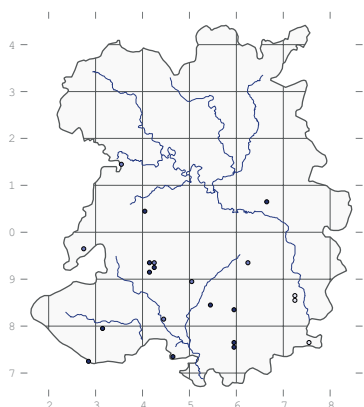
***Fossombronina pusilla* (L.)**

Nees

**Common Frillwort**

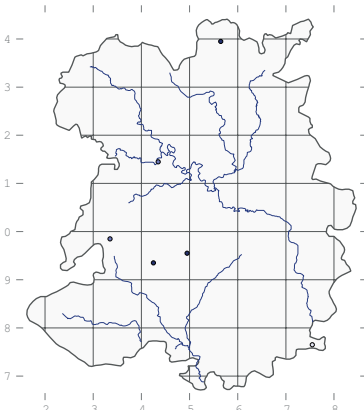
First record: J.B. Duncan, 1907, Wyre Forest.

This is probably the commonest member of the genus. It is mostly recorded in the hills in places like the Long Mynd (M.E. Newton, 1994), Rock of Woolbury (A.R. Perry, 1995), Wenlock Edge (M. Lawley, 1998) and Titterstone Clee (D.H. Wrench, 2004).

***Fossombronina wondraczekii* (Corda) Lindb.****Acid Frillwort**

First record: J.B. Duncan, 1908, Wyre Forest (Record of Bare Facts 18, 1909).

Although a common species there are far fewer records than for *F. pusilla*. The record dates are well spaced too so it may well be overlooked. There are recent records for Ashes Hollow (M.E. Newton, 1994), Willstone (M. Lawley, 1997) and the margin of Pool 6 at Brown Moss (SJ561393, 2004, det. N.G. Hodgetts).

***Fossombronina incurva***

Lindb.

**Weedy Frillwort**

In OV35 *Lythrum portula* community on the margin of Pool 6 at Brown Moss (SJ56343942, M.F. Godfrey, 2006)

and at Old Farm Quarry, Stapleton (M. Lawley, 2007). This species is dioicous and is often first noticed by the conspicuous golden yellow male organs.

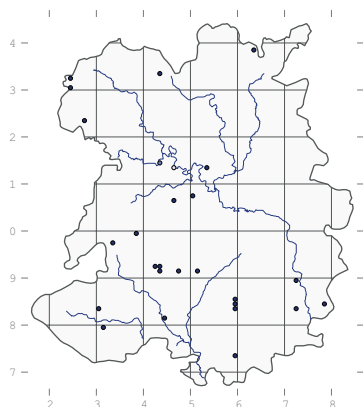
***Metzgeria violacea* (Ach.)**

Dumort.

**Blueish Veilwort**

First record (as *M. fruticulosa*): W.A. Leighton, 1849, Shelton Rough (det. D.G. Long, E).

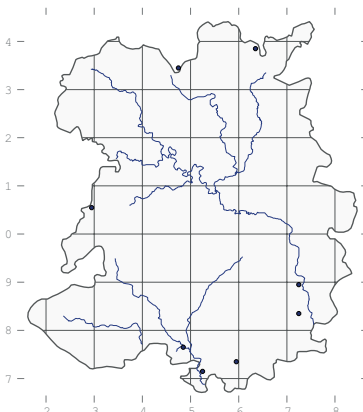
Usually on elder, sometimes by lowland rivers as at Preston Montford (M.E. Newton, c. 1980) or by the Borle Brook at New England (M.F. Godfrey, 2010). This habitat is often W6d *Sambucus nigra* woodland, but elder is very widespread and it can be found on shrubs elsewhere as well, as on Lyth Hill (D.H. Wrench, 2003), Haughmond Hill (M.F. Godfrey, 2006), Cynynion Quarry (M. Lawley, 2006) and Rock of Woolbury (A.R. Perry, 1995).

***Metzgeria consanguinea***

Schiffn.

**Whiskered Veilwort**

First record: M. Lawley, 1999, River Teme at Bromfield.



On the bark of a range of tree species and on a wide range of soil types, in numerous places over the last decade, including Wem Moss (M.E. Newton, 1999), Eardington Plant Quarry (M. Lawley, 2006), Tantree Bank (D.H.

Wrench, 2007) and Shavington Park (M.F. Godfrey, 2009). It is very similar to *M. violacea* and may well be mistaken for it.

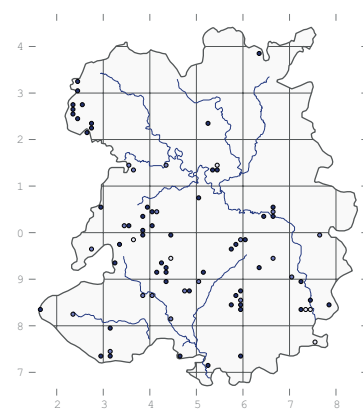
***Metzgeria furcata* (L.)**

Dumort.

**Forked Veilwort**

First record (as *Jungermannia furcata*): Williams, c. 1800, 'Stiperstones Rocks.'

This is by far the commonest member of the genus in the county and is found throughout growing in more or less large patches on a variety of tree bark, including Ash, Sycamore and willow species.

***Metzgeria conjugata* Lindb.****Rock Veilwort**

First record: J.B. Duncan, 1906, the Long Mynd.

On base-rich rocks and trees in humid woods, well-known on the Long Mynd and also recorded in the Wyre Forest (Duncan, 1907), along the Borle Brook (Duncan, 1909), Benthall Edge (N.G. Hodgetts, 2003) and Wenlock Edge (M. Lawley, 2003).

***Metzgeria pubescens***

(Schränk) Raddi.

**Downy Veilwort**

First record: J.A. Paton, 1960, Llanymynech Hill.

Just four records: Llanymynech Hill (J.A. Paton, 1960), Blodwel Wood (possibly the same place) (Anon, 1977), Wolverton Wood (G. Bloom, 1979) and Harton Hollow (A.R. Perry, 1995). This odd little plant grows on dry limestone rocks, usually in woodland; all these sites are W8 *Fraxinus excelsior* woods. It gets its name for its distinctly furry appearance under the lens.

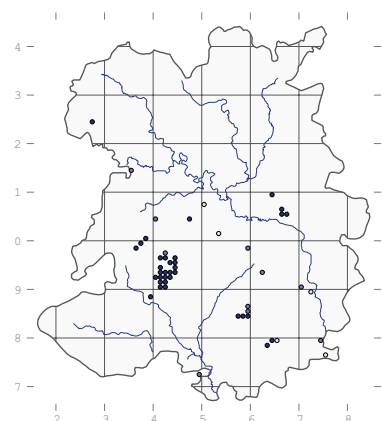


***Aneura pinguis* (L.) Dumort.**

**Greasewort**

First records (as *Jungermannia pinguis*): Williams, c. 1800, Shomere Pool and Acton Burnell Hill.

In M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* in Jonathan's Hollow (D.A. Callaghan, 2012); and in M35 *Montia fontana* in Carding Mill Valley (Tapper, 1983). Also in similar habitats on other hills in the county, including Brown Clee (first recorded by J.B. Duncan in 1920), Coalbrookdale (N.G. Hodgetts, 1992), Earl's Hill (J.G. Duckett, 1975), the Ercall (Newton, 1999), Wenlock Edge (M.F.V. Corley, 1979) and the Wyre Forest (Duncan, 1908). It has recently been recorded in quarries such as Stoneyhill (R.F. Shoubridge, 1992) and Dolgoch (M. Lawley, 2002), so it does colonise suitable new sites quite readily.



***Aneura mirabilis* (Malmb.)**

Wickett and Goffinet

**Ghostwort**

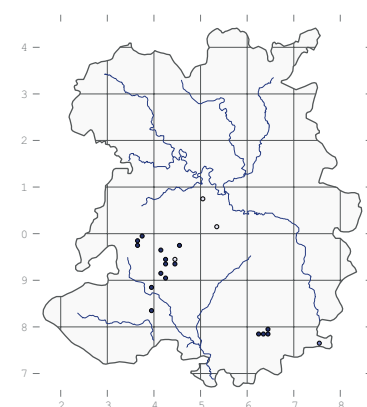
Under layers of *Sphagnum* in woods, presumably W4 *Betula pubescens* woodland. The only Shropshire record is by J.H. Dickson at Whixall Moss in 1968 (as *Cryptothallus mirabilis*).

***Riccardia multifida* (L.) Gray**

**Delicate Germanderwort**

First record (as *Jungermannia multifida*): Williams, c. 1800, Acton Burnell Hill and Shomere Moss.

In flushes and bogs on the hills, including several places on the Long Mynd (e.g. Ashes Hollow, M.O. Hill, 1975), Catherton Common (F. Rose, 1987), Hopesay Hill (R.F. Shoubridge, 1998), the Stiperstones (M.E. Newton, 1992), and Titterstone Clee (A.R. Perry, 1995). Very similar to the following species and best confirmed microscopically.



***Riccardia chamedryfolia***

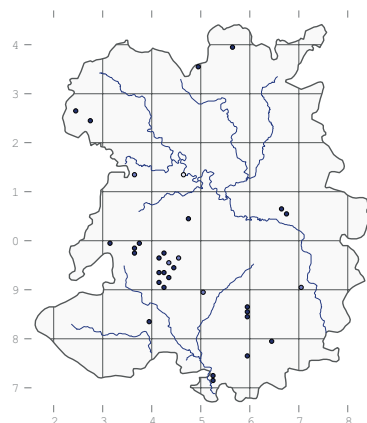
(With.) Grolle

**Jagged Germanderwort**

First record: Hamilton, 1886, Shelton Rough (Record of Bare Facts 9, 1900).

In very wet places, mainly on the hills but sometimes also in lowland situations. It occurs in M10 *Carex dioica* and M13 *Palustriella commutata* at Trefonen Marshes; M23 *Juncus effusus* in Gogbatch (C.M. Owen, 1983); M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983).

Good places to see it include Alberbury Quarry (N.G. Hodgetts, 1984) and Brown Moss (M.F. Godfrey, 2010). It is widespread on the Long Mynd, where it has been recorded since 1906 (J.B. Duncan), and on other hills such as Brown Clee (G. Bloom, 1979), Hopesay Hill (R.F. Shoubridge, 1998), the Stiperstones (Hodgetts, 2002) and Titterstone Clee (D.H. Wrench, 2004). Similar to the previous species but is less likely to be found in flushes and springs.



***Riccardia latifrons* (Lindb.)**

Lindb.

**Bog Germanderwort**

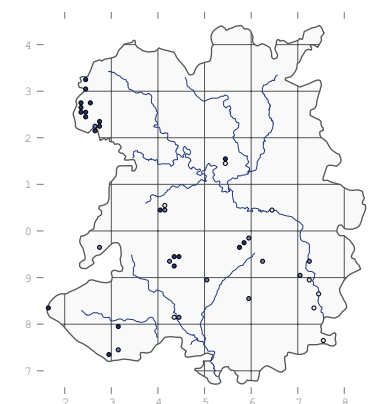
The only record is from Whixall Moss by F. Rose in 1960 (BBSUK). This is rather larger than the previous two species and forms patches growing over *Sphagnum*.

***Porella platyphylla* (L.) Pfeiff.**

**Wall Scalewort**

First record (as *Jungermannia platyphylla*): Williams, c. 1800, 'common.'

Abundantly on calcareous rock and occasionally on the bases of trees. There are records in all suitable habitats in the county but it occurs most frequently in the quarries and rock exposures in the north-west of the county. Good places to look for it include Ashes Hollow (first recorded by G.G. Graham in 1961) and on Earl's Hill (F. Rose, 1960).



***Porella cordaeana* (Hübener)**

Moore

**Cliff Scalewort**

First record: M.F.V. Corley, 1975, Horderley.

There are rather few records for this species. It has been recorded at Oaks Wood (M.E. Newton, c. 1980), Marrington Dingle (Newton, 1980), Earl's Hill (Anon, 1983 and M. Lawley, 2002) and Hough's Coppice (Lawley, 1994). Although it somewhat resembles the previous species it is more a plant of tree bases and rocks near water.

***Porella arboris-vitae* (With.)**

Grolle

**Bitter Scalewort**

First record: Hamilton, 1898, Haughmond Hill.

There are six other records for this species (the early ones as *Madotheca laevigata*); Wyre Forest (W.B. Allen 1906), Lightspout Hollow (J.B. Duncan, 1909), Candy Valley (R.F. Shoubridge, 1992), The Batch (M.E. Newton, 1994), Coed-detton (M. Lawley, 1999) and Craig Sychtyn (Lawley, 2002). It shares the habitat requirements of *P. platyphylla* but is generally scarcer. Unusually it is one of the few bryophytes the taste of which is a field character being rather hot and acrid when nibbled.

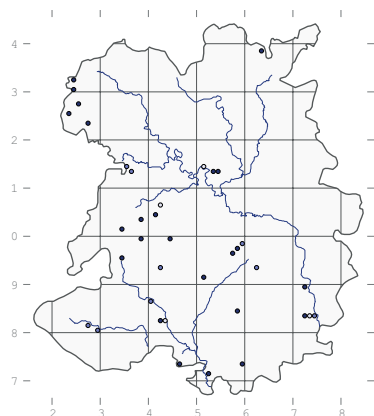
***Radula complanata* (L.)**

Dumort.

**Even Scalewort**

First record (as *Jungermannia complanata*): Williams, c. 1800, 'trunks of trees.'

Quite a common species, growing as an epiphyte in thin patches on tree trunks and larger branches, typically in W8 *Fraxinus excelsior* woodland, as along the Borle Brook at New England (M.F. Godfrey, 2010). A good place to look for it is on Earl's Hill, where it has been recorded many times since 1966 (Sinkler) and it was described as 'rare, in ash woodland on stump and on rock under *Tilia platyphyllos* near brook' (R.D. Porley, 1986).

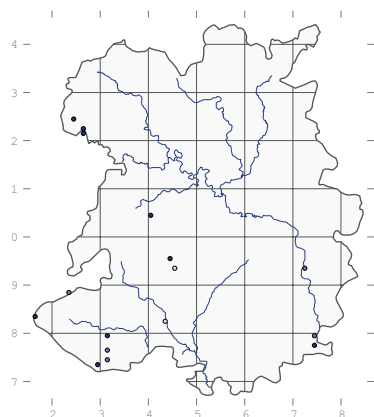
***Frullania tamarisci* (L.)**

Dumort.

**Tamarisk Scalewort**

First record: Hamilton, 1890, Church Stretton.

On both rock and trees; not uncommon but it needs examination with a lens to distinguish it from other species in the genus. Recent sites of it include Rock of Woolbury (A.R. Perry, 1995), Llanymynech Hill (M.E. Newton, 1997) and Earl's Hill (F.J. Rumsey, 2004).

***Frullania fragilifolia* (Taylor)**

Gottsche, Lindenb. &amp; Nees

**Spotty Scalewort**

Recorded in just two places on the Long Mynd: at Lightspout (W.E. Nicholson, 1910) and in Townbrook Hollow (M.E. Newton, 1994). It is usually found on rock and occasionally on trees. It is called "spotty" because of its tendency to shed leaves as little dark spots when a moistened fingertip is pressed on to it.

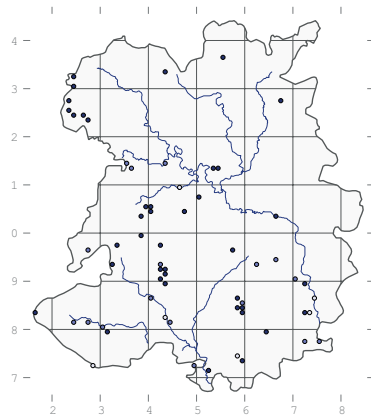
***Frullania dilatata* (L.)**

Dumort.

**Dilated Scalewort**

First record (as *Jungermannia dilatata*): Williams, c. 1800, 'trunks of trees.'

This is by far the commonest species of the genus and grows more exclusively as an epiphyte than the two others mentioned above. It is found throughout the county. Good places to look for it include Earl's Hill (first recorded by J.G. Duckett, 1975), Haughmond Hill and Preston Montford (E.F. Warburg, 1957).

***Cololejeunea rossettiana***

(C. Massal.) Schiffr.

**Rossetti's Pouncewort**

Just two records: at Highley (J.B. Duncan, 1912) and Ippikin's Rock (M. Lawley, 2003). This is a strict calcicole and is usually found in rather dry habitats.

***Colura calyptrifolia* (Hook.)**

Dumort.

**Fingered Cowlwort**

Just one record: Colstey Wood (SO306838, M. Lawley, det. T.H. Blackstock, 2004, BBSUK). This is a minute and rather unusual-looking species of distinctly western/oceanic distribution. It is increasingly being found on spruce in conifer plantations, but the plant found in Shropshire was reported on hazel.

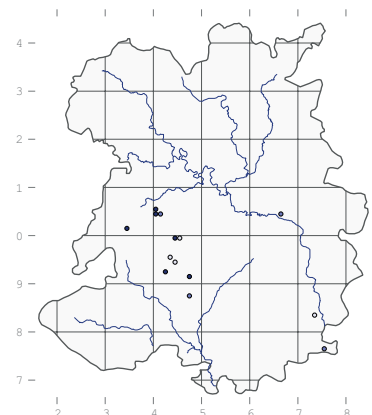
***Lejeunea cavifolia* (Ehrh.)**

Lindb.

**Micheli's Least Pouncewort**

First record: Hamilton, 1905, Smethcott.

In sheltered, humid sites where it will grow on both rocks and trees. Recorded in various places on the Long Mynd (firstly by J.B. Duncan, 1906), by the Borle Brook, in Coalbrookdale and Wyre Forest (all Duncan, 1909-16), Earl's Hill (M.E. Newton, 1978), Wenlock Edge (G. Bloom, 1979), Hope Coppice and Soudley Quarry (M. Lawley, 1997 & 2001).

***Lejeunea lamacerina***

(Steph.) Schiffr.

**Werstern Pouncewort**

First record: M.C. Clark, 1959, 'on rocks near stream south of Buttonoak.'

On rock by streams in sheltered valleys. It has been recorded on Earl's Hill (F. Rose, 1960), the Long Mynd (N.G. Hodgetts, 1984), Longdon Wood and Gittinsay Wood (both M. Lawley, 2002 & 2003).

***Marchesinia mackaii* (Hook.)**

Gray

**MacKay's Pouncewort**

Recorded only on Llanymynech and Llynclys Hills, initially by M.C.F. Proctor in 1960. This species looks superficially like a *Frullania* and grows on shaded, base rich, rocks.

***Microlejeunea ulicina***

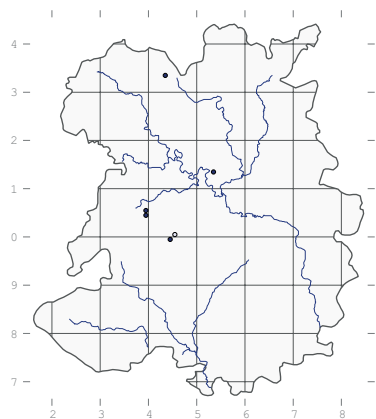
(Taylor) A. Evans

**Fairy Beads**

First record: J.B. Duncan, 1906, Smethcott Hollow.

A very small epiphyte of sheltered, humid, places where it may also occasionally grow on rock. There are recent records of it in Smethcott Hollow (M. Lawley, 2001), at Cole Mere (Lawley, 2005), Poles Coppice (D.H. Wrench, 2006), Nills Hill Quarry

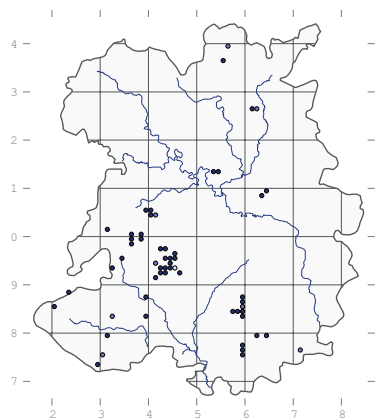
(Lawley, 2007) and on Haughmond Hill (M.O. Hill, 2012).



## *Ptilidium ciliare* (L.) Hampe Ciliated Fringewort

First record: Hamilton, 1903, Haughmond Hill.

Typically in well-drained acidic grassland. It is recorded in H12 *Vaccinium myrtillus* heath on the Long Mynd (C.M. Owen, 1983) and at Rhos Fiddle and in U5 *Nardus stricta* grassland on Titterstone Clee (A.K. Thorne, 1999). Other good places to look for it include Earl's Hill (F. Rose, 1960 – F.J. Rumsey, 2004) and on the Stiperstones (Hamilton, 1906 – N.G. Hodgetts, 2002).



## *Ptilidium pulcherrimum* (Weber) Vainio

### Tree Fringewort

First record: Sinker, 1966, Oaks Wood.

An epiphyte on birch or willow. Also recorded near Morville (BBS, 1971), Wolverton Wood (G. Bloom, 1979) and Shomere Pool (D.H. Wrench, 2003).

## *Blepharostoma trichophyllum* (L.) Dumort.

### Hairy Threadwort

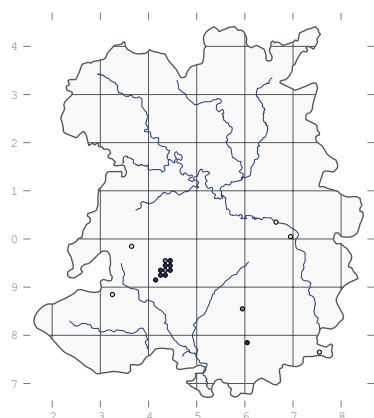
Recorded by J.B. Duncan in the Wyre Forest in 1908 and in Coalbrookdale in 1913.

## *Trichocolea tomentella* (Ehrh.) Dumort.

### Handsome Woollywort

First record: Mr L. Brown, c. 1730, Bishop's Castle.

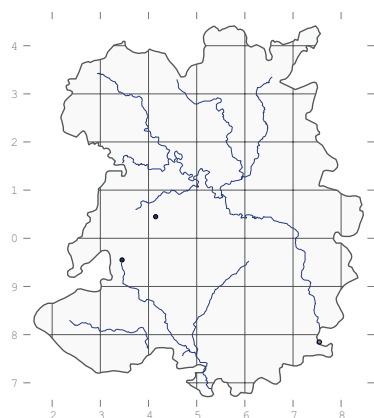
In permanently damp, humid places in the hills, specifically on the Long Mynd (first recorded by J.B. Duncan in 1906), Stiperstones (Benson, 1899), and Brown Clee (G. Bloom, 1979), and formerly in the Coalbrookdale area (W.B. Allen, 1902) and Wyre Forest (Duncan, 1902). In Carding Mill Valley it grows in M35 *Montia fontana* (R. Tapper, 1983) but elsewhere it may be more typical of M23 *Juncus effusus* along streams. Away from its core populations on the higher hills it has probably declined considerably.



## *Bazzania trilobata* (L.) Gray Greater Whipwort

First record: Hamilton, 1899, Oaks Wood.

In humid, acid woods, in fine stands of W16 *Quercus petraea* and W17 *Leucobryum glaucum* woodland in some places. At Oaks Wood it was nearly eradicated in 2003 when clearings were created, but it did survive in small quantities (Rumsey, 2005). Also in the Wyre Forest (originally by J.B. Duncan in 1910) and on Black Rhadley (M. Lawley, 2007).

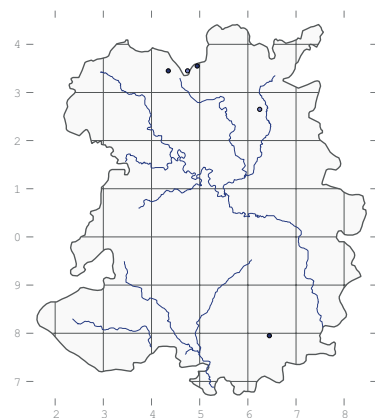


## *Kurzia pauciflora* (Dicks.) Grolle

### Bristly Fingerwort

First record: Hamilton, 1900, Whixall Moss.

On Catherton Common (first recorded by Wigginton, 1981), Clarepool Moss (F. Rose, 1959) and Whixall Moss. Formerly also on Wem Moss (Rose, 1959) and Hodnet Heath (Rose, 1965) but not seen at Hodnet since, and last recorded on Wem Moss in 1984 (N.G. Hodgetts).

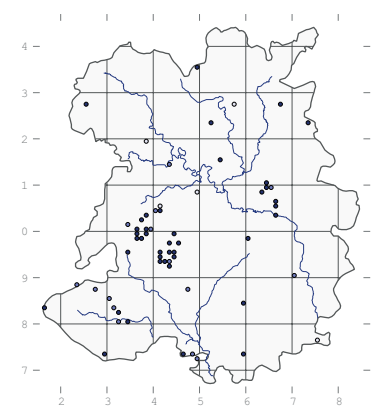


## *Lepidozia reptans* (L.) Dumort.

### Creeping Fingerwort

First record: Hamilton, 1891, Lyd Hole.

In upland woods and heathland on neutral to acid soils, mainly on the hills but also in lowland bogs. It occurs in W16 *Quercus petraea* woodland on the Ercall and at Oaks Wood and in W5 *Alnus glutinosa* at Haughmond Abbey Wood. It is also frequent on the Long Mynd (first recorded there by J.B. Duncan in 1906) and the Stiperstones range, and in woods in the south west, such as Clunton Coppice and Fron Wood, Mainstone (both R.D. Porley, 1984).





***Lepidozia cupressina*** (Sw.)  
Lindenb.

### Rock Fingerwort

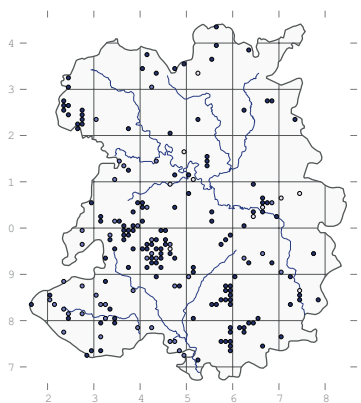
Just one record: Black Rhadley, M. Lawley, 2002.

***Lophocolea bidentata*** (L.)  
Dumort.

### Bifid Crestwort

First record (as *Jungermannia bidentata*):  
Williams, c. 1800, 'common'.

Very common, found throughout the county in moist habitats. It is recorded in MG5 *Festuca rubra* grassland at Burnt House, Rushbury, Hayton's Bent, Hill Houses and Lubberland (all D.H. Wrench, 1994-5); M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979), Sweeny Fen (A. Hillman, 1992) and Trefonen Marshes; M23 *Juncus effusus* in Ashes Hollow and Gogbatch (both C.M. Owen, 1983); M35 *Montia fontana* in Carding Mill Valley (Tapper, 1983); S27 *Comarum palustre* at Shomere Pool (Wigginton, 1979); U20 *Pteridium aquilinum* community on Titterstone Cleve (A.K. Thorne, 1999); W4 *Betula pubescens* woodland at Lin Can Moss; and both W5 *Alnus glutinosa* and W10 *Quercus robur* at Haughmond Abbey Wood. A good place to see it is at Earl's Hill, where it is 'in several habitats but most characteristic of fallen/rotten wood, tree bases, the ash woodland floor and paths' (R.D. Porley, 1986).



***Lophocolea heterophylla***  
(Schrad.) Dumort.

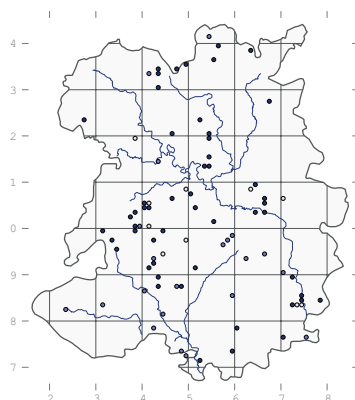
### Variable-leaved Crestwort

First record: W. Phillips, 1877, The Wrekin.

Almost as common as the previous species, but this plant tends to have a more restricted substrate preference, typically as an epiphyte or on logs and litter in woodland. In the more northern and western parts of its distribution it is regarded as an ancient

woodland indicator. It is recorded in W16 *Quercus petraea* woodland on the Ercall, W5 *Alnus glutinosa* woods at Blake Mere (M.J. Wigginton, 1979) and Sweat Mere (J. Mallabar, 1998), W7 *Lysimachia nemorum* below the Ercall (I.C. Trueman, 1981) and W8e *Fraxinus excelsior* on Haughmond Hill.

Good places to look for it include Brown Moss, where it was first recorded by E.F. Warburg in 1957, Cole Mere (Sinkler, 1963), Benthall Edge (M.E. Newton, 1981) and Llynclys Hill (R. Mileto, 1988).



***Lophocolea fragrans*** (Moris & De Not.) Gottsche et al.

### Fragrant Crestwort

First record: J.B. Duncan, 1906, Smethcott Hollow.

There are just two other records: at Preston Montford (E.F. Warburg, 1957) and Smethcott Hollow (M. Lawley, 2001). This is a much smaller plant than the previous two and is found on rocks in humid places.

***Chiloscyphus polyanthos***  
(L.) Dumort.

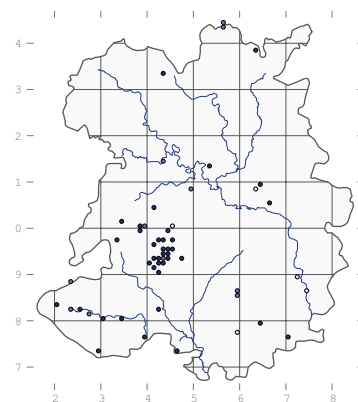
### St Winifrid's Moss

First record: Williams, c. 1800, 'springs at the north end of the Wrekin.'

Either fully aquatic or in very wet places. It cannot be separated reliably from the following species in the absence of the perianth. There are records of it in M10 *Carex dioica* on Hope Bowdler Hill (P. Eades, 2010), S27 *Comarum palustre* at Bomere Pool, S4 *Phragmites australis* at Oss Mere (both M.J. Wigginton, 1979), W4 *Betula pubescens* woodland on Haughmond Hill and W5 *Alnus glutinosa* at Oss Mere (Wigginton, 1979).

It is also known in streams on the Long Mynd, where it was first recorded by J.B. Duncan in 1906, the River Clun in various places (K. Dale, 1989) and

meres such as Cole Mere (M. Lawley, 2005). At Earl's Hill it is 'rare on the banks of the Habberley Brook and on the path above the ash woodland' (R.D. Porley, 1986).

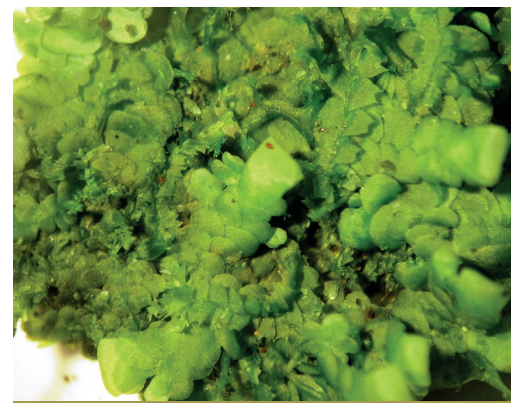


***Chiloscyphus pallescens***  
(Ehrh. ex Hoffm.) Dumort.

### St Winifrid's Other Moss

First records: J.B. Duncan, 1913, Benthall Edge and woods near Highley.

Well known in several of the batches on the Long Mynd, where it was first recorded by J.G. Duckett in 1974, and it is found in M35 *Montia fontana* flushes in Long Batch (D.A. Callaghan, 2012). Also known at Hopesay Hill (S.D.S. Bosanquet, 2004), Hilton Sand Pit (M. Lawley, 2006) and Brown Cleve

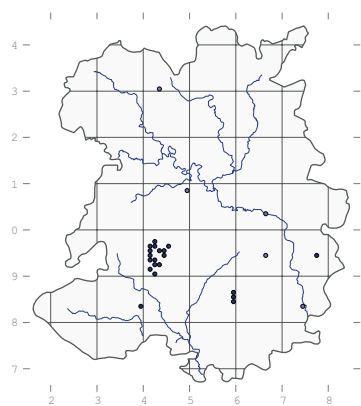


*Radula complanata* in Benthall Edge Woods (Martin Godfrey)



*Porella platyphylla* in Llanymynech Quarry (Martin Godfrey)

(Lawley, 2007). There are older records for Bomere Pool (M.J. Wigginton, 1979) and Sweat Mere (M.E. Newton, 1979).



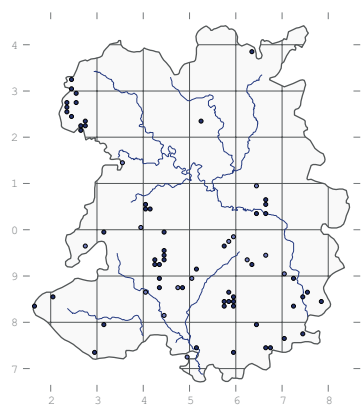
## *Plagiochila porelloides* (Torr. ex Nees) Lindenb.

### Lesser Featherwort

First record: J.G. Duckett, 1967, the Long Mynd.

Frequent throughout the county in damp, sheltered habitats which are somewhat base rich. Care must be taken in recording this species as it is rather like a slightly smaller version of the following.

It is well known on the Long Mynd, where it was first recorded by Duckett in 1967, Earl's Hill (Sinker, 1969), Wenlock Edge (Corley, 1979), Benthall Edge (M.E. Newton, 1982) and on the limestone in the NW, where it was first recorded by J.L. Daniels at Llanymynech Rocks in 1992.



## *Plagiochila asplenioides* (L.) Dumort.

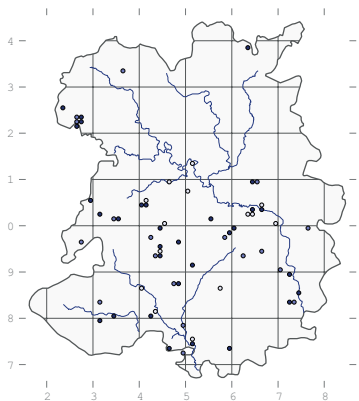
### Greater Featherwort

First record (as *Jungermannia asplenioides*): Williams, c. 1800, 'Shomere Moss'.

Common throughout the county in damp, sheltered habitats – perhaps most typically on woodland banks. It looks like a larger version of the preceding species but can grow on

rather more acidic substrates. It has been recorded in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983) and in W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981).

Typical places for it include Earl's Hill (F.J. Rumsey, 2004), Tantree Bank (D.H. Wrench, 2007), Shavington Park (M.F. Godfrey, 2009) and Stoke Wood.



## *Plagiochila britannica* Paton British Featherwort

First record: Whild, 2003, 'along the old railway line at Benthall Edge' (conf. N.G. Hodgetts).

A calcicole, first recorded on an old heap of soil and rubble from the tile works near the old railway line in Benthall Edge wood, in W8 *Fraxinus excelsior* woodland. It has subsequently been reported from Wheathill (M. Lawley, 2004) and Shavington Park (M.F. Godfrey, 2009). Very like the previous two species it can only be satisfactorily identified by measuring its leaf cell size.

## *Plagiochila spinulosa* (Dicks.) Dumort.

### Prickly Featherwort

First record: W.G. Travis, 1909, Ashes Hollow.

A very westerly, upland plant in Britain. On the Long Mynd it was last recorded in Callow Hollow by J.B. Duncan in 1910, and he also found it in the Wyre Forest in 1916. Duncan also first found it at the Rock of Woolbury in 1913 (conf. M.F.V. Corley, E) where it is still to be found (A.R. Perry, 1995).

## *Jamesoniella autumnalis* (DC.) Steph.

### Autumn Flapwort

Just three records: in the Wyre Forest (J.B. Duncan, 1907 and F. Rose, 1969) and at Highley (Duncan, 1910). It is typical of sessile oak woodland, and is on the eastern edge of its range.

## *Jamesoniella undulifolia* (Nees) Müll.Frib.

### Marsh Earwort

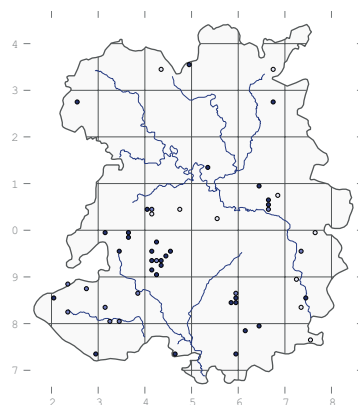
A nationally rare species, first found at Hopesay Hill (SO398836) by D.H. Wrench in 2004 (conf. G.P. Rothero, BBSUK) and subsequently on Nover's Hill (SO453952) and Catbatch (SO414973) on the Long Mynd by M. Lawley in 2011 and (in a different place on Novers Hill) by M.F. Godfrey in 2012. The plant is associated with *Sphagnum* hummocks on the edges of more or less base-rich flushes.

## *Cephalozia bicuspidata* (L.) Dumort.

### Two-horned Pincerwort

First record (as *Jungermannia bicuspidata*): Williams, c. 1800, Cound Moor.

In a range of habitats from acid bogs to rotting logs in woodland. Well known on Whixall Moss, where it was first recorded by Hamilton in 1900, and it has been recorded in other mires such as Clarepool Moss (Hamilton, 1900), Cramer Gutter (M. Lawley, 2000) and on the Stiperstones (N.G. Hodgetts, 2002). It is occasional in acid W16 *Quercus petraea* woods such as Clunton Coppice (R.D. Porley, 1984) and the Ercall (M.E. Newton, 1999) and in base-rich W8 *Fraxinus excelsior* woods at Lydebrook Dingle (Newton, 1994) at Earl's Hill (Sinker, 1969), where it is described by Porley (1986) as 'rare on tree bases and fallen/rotten wood.' In 1914 J.B. Duncan noted the var. *conferta* Hüb. on sandstone rock outcrops near Rindleford (*Record of Bare Facts* 24, 1915). It has been found as high as the summit of Brown Clee (Duncan, 1920 & G. Bloom, 1979).



***Cephalozia macrostachya***

Kaal.

**Bog Pincerwort**

First records: F. Rose & D.J. Bellamy, 1959, Clarepool Moss and Wem Moss.

A bog plant, formerly on lowland mires at Clarepool Moss (last seen by Sinker in 1961), Wem Moss and Whixall Moss (G.G. Graham, 1960) and in a more upland situation in M15 *Trichophorum germanicum* at Cramer Gutter (Wigginton, 1979 – N.G. Hodgetts, 2001).

***Cephalozia lunulifolia***

(Dumort.) Dumort.

**Moon-leaved Pincerwort**

First record: F. Rose & D.J. Bellamy, 1959, Wem Moss.

In deciduous woods on tree trunks and stumps, at Earl's Hill (Sinker, 1969), Grinshill Hill, Whithalls Wood and Loamhole Dingle (all M. Lawley, 2002-03).

***Cephalozia pleniceps* (Austin)**

Lindb.

**Blunt Pincerwort**

In a few places on the Long Mynd (M. Lawley, 2009 & D.A. Callaghan, 2013) and Catherton Common (Lawley, 2010).

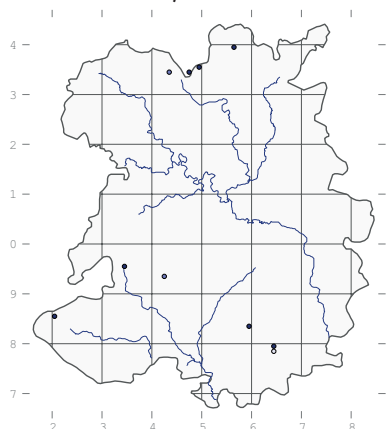
***Cephalozia connivens***

(Dicks.) Lindb.

**Forcipated Pincerwort**

First record: J.B. Duncan, 1909, Catherton Common.

In lowland bogs such as Whixall Moss (first recorded by G.G. Graham in 1960) and Wem Moss (Sinker, 1962), as well as upland moors on the Long Mynd (J.G. Duckett, 1974) and Rhos Fiddle (M. Lawley, 2002).

***Cladopodiella fluitans***

(Nees) H. Buch

**Bog Notchwort**

First records: F. Rose & D.J. Bellamy, 1959, Clarepool Moss and Wem Moss.

Currently known only at Cramer Gutter (SO647794), where it was found by A.R. Perry in 1994 and Whixall Moss, where it was found by Sinker in 1962 and most recently seen by M.E. Newton in 1993.

***Cladopodiella francisci***

(Hook.) H. Buch ex Jörg.

**Holt Notchwort**

Only at Cramer Gutter (SO648795, M. Lawley, 2000, det. T.H. Blackstock, BBSUK). It is typical of bare peat in heathlands in the south of England.

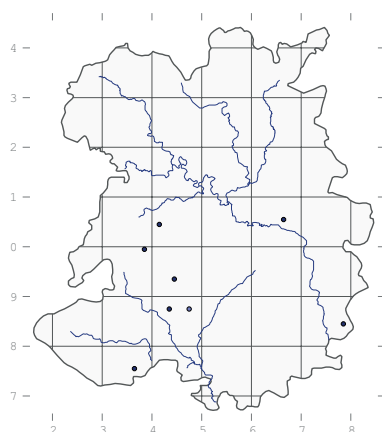
***Nowellia curvifolia* (Dicks.)**

Mitt.

**Wood-rust**

First record: G. Bloom & M. Pearman, 1979, Wolverton Wood.

On fallen trees in humid places, typically W8 *Fraxinus excelsior* woods like Bushmoor Coppice and Earl's Hill (R.D. Porley, 1986), or W10 *Quercus robur* woodland in places like Darky Dale. It has been increasing in England in recent decades.

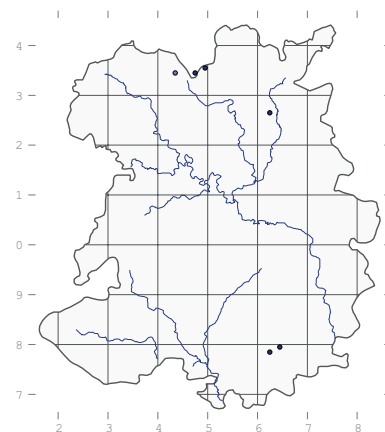
***Odontoschisma sphagni***

(Dicks.) Dumort.

**Bog-moss Flapwort**

First records: F. Rose & D. Bellamy, 1959, Clarepool Moss and Wem Moss.

In M2a *Sphagnum cuspidatum* bog pools on Hodnet Heath (SJ620264, M.F. Godfrey, 2011), Wem Moss and Whixall Moss and M15 *Trichophorum germanicum* at Cramer Gutter. It has also been recorded in flushes on Catherton Common (A.R. Perry, 1995).

***Odontoschisma denudatum***

(Mart.) Dumort.

**Matchstick Flapwort**

First record: Sinker, 1960, Wem Moss.

Typical of drying peat bogs and on logs in upland woods. There are no recent records for Wem Moss, but it has been found on Whixall Moss (N.G. Hodgetts, 1992), Cramer Gutter (M. Lawley, 1998) and Carding Mill Valley (Hodgetts, 2006).

***Cephaloziella elachista* (J.B.**

Jack ex Gottsche &amp; Rahbenh.)

Schiffn.

**Spurred Threadwort**

Only one site, at Cramer Gutter, where it was found by M.J. Wigginton in 1979 (conf. J.A. Paton, BBSUK). It was still there in 2001 (N.G. Hodgetts), where it is confined to the wettest parts of the M15 *Trichophorum germanicum* mire.

***Cephaloziella rubella* (Nees)**

Warnst.

**Red Threadwort**

First record: R.F. Shoubridge, 1990, Brown Moss.

This is a species of damp acidic or neutral habitats and is rather difficult to distinguish from the following species. There are just three other recorded sites; the Stiperstones (SJ370000, D.H. Wrench, 1992), Whixall Moss (N.G. Hodgetts 1992) and Hopesay Hill (R.F. Shoubridge, 1998).

***Cephaloziella hampeana***

(Nees) Schiffn.

**Hampe's Threadwort**

First record: M.E. Newton, 1993, Whixall Moss.

Rather similar to the previous species it also grows in similar acidic or neutral habitats. There are two other recorded sites: The Ercall (Newton, 1999) and Clee Burf (M. Lawley, 2007).

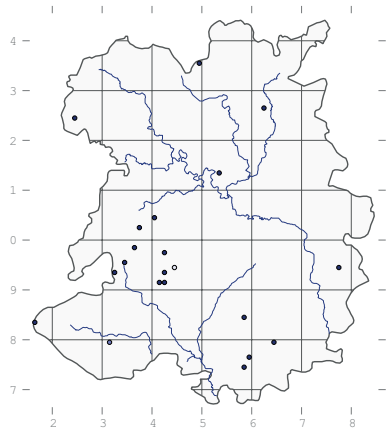


***Cephaloziella divaricata***  
(Sm.) Schffn.

**Common Threadwort**

First record (as *C. byssacea*): J.B. Duncan, 1906, the Long Mynd.

This is the commonest member of its genus; it has a broader ecological amplitude than the other species and is rather more drought resistant. On Hodnet Heath it occurs in M16 *Sphagnum compactum* (SJ620262, M.F. Godfrey, 2011). Other recent sites for it include Earl's Hill (F.J. Rumsey, 2004), Haughmond Hill (M.F. Godfrey, 2006), Hilton Sand Pit (M. Lawley, 2006) and Titterstone Clee (D.H. Wrench, 2004).



*Jamesoniella undulifolia* on Hopesay Hill (Dan Wrench)



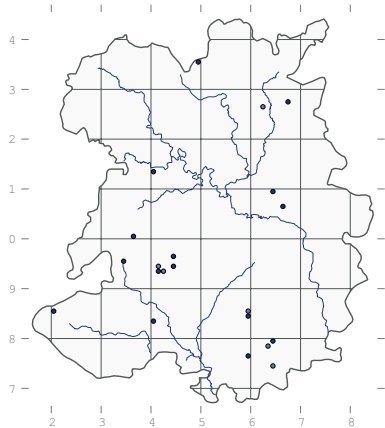
*Lophocolea bidentata* in Benthall Edge Woods (Martin Godfrey)

***Gymnocolea inflata*** (Huds.)  
Dumort.

**Inflated Notchwort**

First record: G.G. Graham, 1961, Ashes Hollow.

This rather common species is scattered throughout the county, on the more acid hills and mosses. Typical sites for it include Brown Clee (G. Bloom, 1979), Rhos Fiddle (S. Kingsbury, 1998), Titterstone Clee (D.H. Wrench, 2004), an arable field at Ford (SJ407134, J.D. Sleath, 2002) and at Whixall Moss (N.G. Hodgetts, 1992).



***Barbilophozia kunzeana***  
(Hübener) Gams

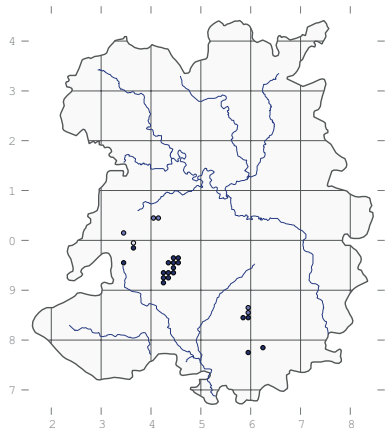
**Bog Pawwort**

In several places on the Long Mynd, where it was discovered in 2009 (SO453950, N.G. Hodgetts).

***Barbilophozia floerkei*** (F.  
Weber & D. Mohr) Löske

**Common Pawwort**

First record (*Jungermannia floerkei*): Hamilton, 1904, 'the Devil's Chair'.



This is one of three rather similar species which can be quite abundant on mossy boulders and in turf, typically on north-facing slopes. This is typically a more Western and upland species and all of the records are confined to high ground in the centre and south of the county. It is frequent

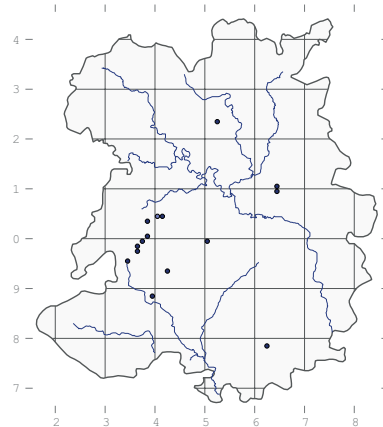
on the Long Mynd (first recorded by J.B. Duncan, 1906), Stiperstones range and Titterstone Clee (J.B. Duncan, 1906).

***Barbilophozia attenuata***  
(Mart.) Löske

**Trunk Pawwort**

First records: Hamilton, Oaks Wood and R.D. Benson (conf. S.M. Macvicar), Stiperstones Hill, both 1899 (*Record of Bare Facts* 9, 1900).

Much more frequent than other species of the genus, most typically on acid bark and decaying stumps but occasionally on acidic rock. Largely confined to higher ground. There are recent records from Catherton Common (A.R. Perry, 1995), the Ercall, the Lawley, Black Rhadley and Grinshill Hill (the last three by M. Lawley, 1996-2002).



***Barbilophozia hatcheri*** (A.  
Evans) Löske

**Hatcher's Pawwort**

First record: E.F. Warburg, 1957, Titterstone Clee.

Very similar to the previous species and living in the same habitats. There are just three other records; Townbrook Hollow (M.E. Newton, 1994), Ashes Hollow (N.G. Hodgetts, 1998) and Gogbatch (M. Lawley, 2003).

***Barbilophozia barbata***  
(Schmidel ex Schreb.) Löske

**Bearded Pawwort**

First record (as *Jungermannia barbata*): Hamilton, 1897, The Burway, Long Mynd.

This is a species which typically occurs in small quantity amongst other bryophytes, usually in upland habitats. It is recorded at Earl's Hill (F. Rose, 1960), Brown Clee (G. Bloom, 1979), Mytton Dingle (M.E. Newton, 1992), Titterstone Clee (J.D. Sleath, 1999) and Rhos Fiddle (M. Lawley, 2002).

***Tritomaria exsectiformis***  
(Breidl.) Löske**Larger Cut Notchwort**

First record: J.B. Duncan, 1916, Wyre Forest.

Just two recent records: Candy Valley (C.C. Townsend, 1992) and the Wyre Forest (R. Shoubridge, 1998).

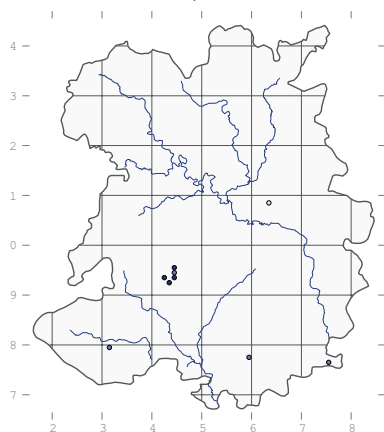
***Tritomaria exsecta*** (Schrad.) Löske**Cut Notchwort**

Just two records: at High Rock, Bridgnorth (E.W. Jones, 1942) and Grit Hill (M.E. Newton, 1980).

***Tritomaria quinquedentata*** (Huds.) H. Buch**Lyon's Notchwort**

First record: Hamilton, 1896, The Wrekin.

A species of steep, damp grassy slopes. Found by J.B. Duncan on the Long Mynd, Rock of Woolbury, Titterstone Clee and Wyre Forest between 1906 and 1913, but seen recently only on the Long Mynd (G.G. Graham, 1961 – M.E. Newton, 1994).

***Lophozia ventricosa*** (Dicks.) Dumort.**Tumid Notchwort**

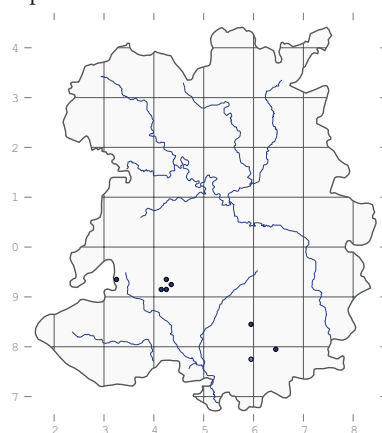
First record: J.B. Duncan, 1906, the Long Mynd and Titterstone Clee.

A common species of wet, acidic habitats including wet heath, peat bogs and flushes where it will grow on rock, soil, peat and decaying wood. There are records scattered throughout the county. Good places to look for it includes Ashes Hollow (first recorded there by W.G. Travis in 1909) and on Earl's Hill (J.G. Duckett, 1975).

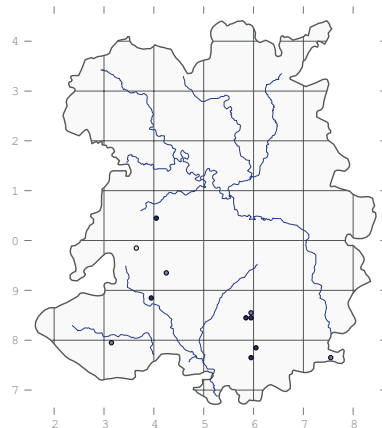
***Lophozia sudetica*** (Nees ex Hübener) Grolle**Hill Notchwort**

First record: J.G. Duckett, 1974, Ashes Hollow.

There are several records from Ashes Hollow, the most recent being in 1998 (N.G. Hodgetts). The other recorded sites are Titterstone Clee (Anon, 1979), Cramer Gutter (A.R. Perry, 1997), More Quarry (M. Lawley, 2007) and Clee Burf (Lawley, 2007). A plant of rather western distribution which occurs in well drained, acidic habitats in exposed locations, such as boulder tops and block screes.

***Lophozia excisa*** (Dicks.) Dumort.**Capitate Notchwort**

First record: Hamilton, 1906, Stiperstones Hill.



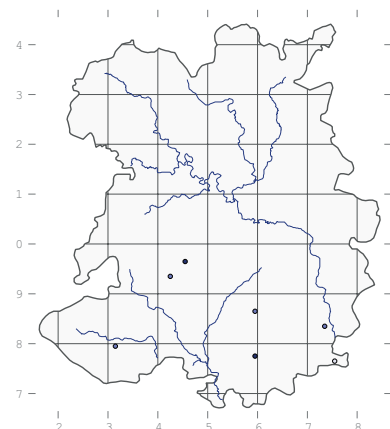
Only a few records from scattered localities in the southern half of the county. Nationally this species is rather more lowland and generally distributed than other members of its genus, although, like them, it requires an acidic substrate. It is found on damp soil or, more occasionally, on decaying wood or amongst other bryophytes on acidic rocks. There are records of it in the Wyre Forest (J.B. Duncan, 1913), Rock of Woolbury (Duncan, 1913), Long Mynd (M.O. Hill, 1975), Brown Clee (G. Bloom, 1979), Earl's Hill (R.D.

Porley, 1986) and Titterstone Clee (J.D. Sleath, 1999).

***Lophozia bicrenata*** (Schmidel ex Hoffm.) Dumort.**Lesser Notchwort**

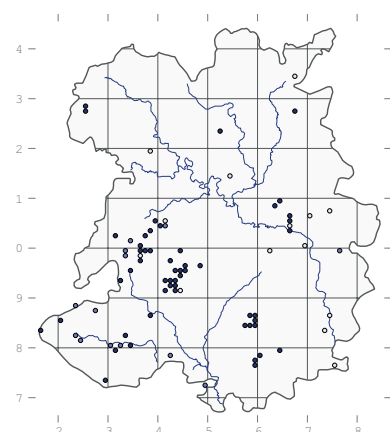
First record: J.B. Duncan, 1909, Wyre Forest.

Apart from old records by Duncan (Borle Brook, 1910, Rock of Woolbury, 1913 and Brown Clee, 1920) there are only three recent sites recorded for this species – Ashes Hollow (J.G. Duckett, 1974), Titterstone Clee (M. Lawley, 2002) and Gogbatch (Lawley, 2003). Nationally the plant is quite widely distributed and is usually to be found on bare soil.

***Diplophyllum albicans*** (L.) Dumort.**White Earwort**

First records: Hamilton, 1898, 'Nesscliffe Hill, Haughmond Hill and near Little Stretton.'

Common throughout the county on acidic substrates in places such as the Long Mynd (firstly by G.G. Graham in 1961), Brown Clee (G. Bloom, 1979), Clunton Coppice (R.D. Porley, 1984), Coed-detton, Earl's Hill (F. Rose, 1960), the Wrekin (W.H. Painter, 1902) and Titterstone Clee (Anon., 1957). It is also known in Candy Valley (R.F. Shoubridge, 1992).



***Diplophyllum obtusifolium***  
(Hook.) Dum.

**Blunt-leaved Earwort**

First record: M. Lawley, 1998, det. T.H. Blackstock, 'woodland ride at Cefn Vron, SO165835'.

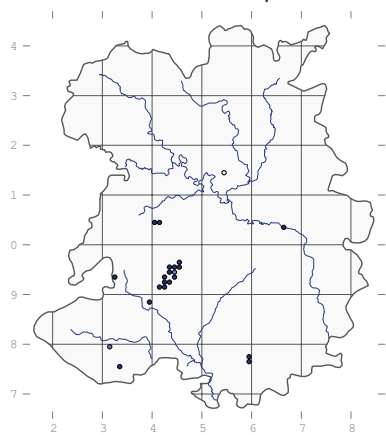
Rather similar to the previous species this plant is, however, a pioneer of open, acidic, sites and so tends not to overlap ecologically too much with it. It has also been found at Bucknell Wood, Kinsley Wood and Riddings Wood (all M. Lawley, 1998) and Nut Batch (Lawley, 2001).

***Scapania compacta*** (A. Roth) Dumort.

**Thick-set Earwort**

First record: Hamilton, 1890, Haughmond Hill.

In open, rocky places that may be a little drier than is usual for leafy liverworts. At Earl's Hill it was recorded as 'rare, on a pocket of soil on rock outcrop in hill grassland on the western side, and on the conglomerate outcrop in Oaks Wood' (R.D. Porley, 1986). It is well known on the Long Mynd (first recorded by W.G. Travis in 1909) and has been found on Benthall Edge (J.W. Bates, 1992), Bucknell Wood (R.F. Shoubridge, 1998), Rock of Woolbury (J.B. Duncan, 1913) and Titterstone Clee (M. Lawley, 2002).



***Scapania cuspiduligera***  
(Nees) Müll. Frib.

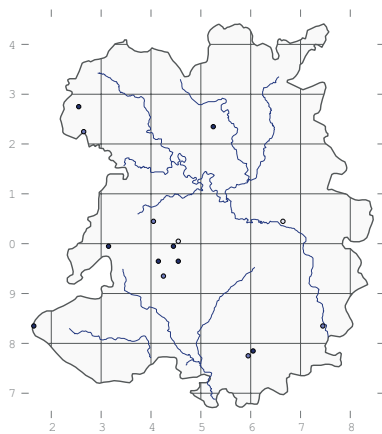
**Untidy Earwort**

Only on Llanymynech Hill, where it has been recorded by J.G. Duckett in 1975 and 1977. A very small plant of calcareous upland habitats.

***Scapania nemorea*** (L.) Grolle  
**Grove Earwort**

First record: W.H. Painter, 1904, Cox Wood.

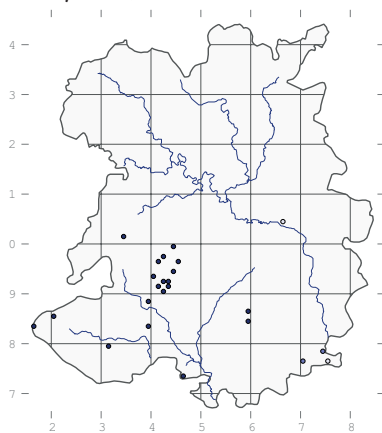
In humid places on sandstone rocks, woodland boulders and decaying logs, in places such as Smethcott Hollow (firstly by J.B. Duncan in 1906), Earl's Hill (J.G. Duckett, 1975), Grinshill Hill (M. Lawley, 2002) and Titterstone Clee (Duncan, 1910).



***Scapania irrigua*** (Nees) Nees  
**Heath Earwort**

First record: W.H. Painter, 1904, Cox Wood.

On damp, gravelly ground, mainly on the hills, as on Brown Clee (first by J.B. Duncan, 1920), the Long Mynd (N.G. Hodgetts, 1984), Rock of Woolbury (A.R. Perry, 1995), Hopesay Hill (R.F. Shoubridge, 1998) and Rhos Fiddle (M. Lawley, 2002).



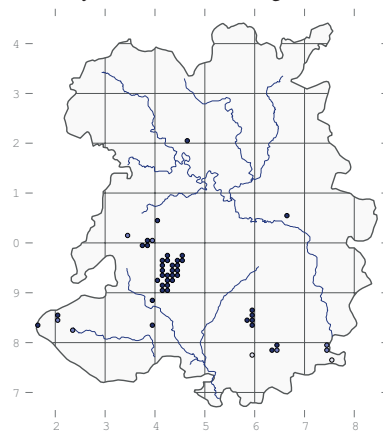
***Scapania undulata*** (L.) Dumort.

**Water Earwort**

First record: J.B. Duncan, 1902, Titterstone Clee.

A large, common species which is frequent on rocks in streams and in flushes, where it can form quite large mounds. It is found on many of the hills, such as the Long Mynd (Duncan, 1906), Brown Clee (Duncan, 1920), Earl's Hill (Sinkler, 1966) and Hopesay

Hill (R.F. Shoubridge, 1998). Also in the Wyre Forest (Duncan, 1908). On the Long Mynd it is recorded in M35 *Montia fontana* (D.A. Callaghan, 2012).



***Scapania aspera*** M. & H. Bern.

**Rough Earwort**

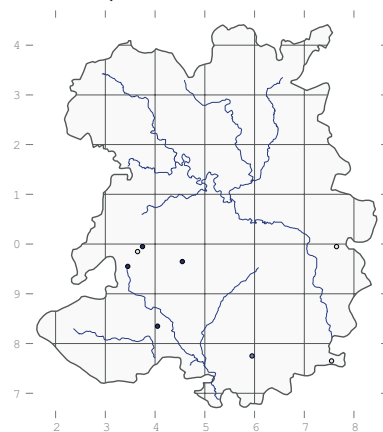
On damp base-rich substrates, recorded at the Rock of Woolbury (J.B. Duncan, 1913), Hodnet Heath (F. Rose, 1965) and in various places on Llyncllys and Llanymynech Hills (first recorded there anonymously in 1977).

***Scapania gracilis*** Lindb.

**Western Earwort**

First record (as *Jungermannia resupinata*): Williams, c. 1800, Stiperstones Hill.

On humid block screes and crags. Known in several places on the Stiperstones and in the Wyre Forest (J.B. Duncan, 1902), Titterstone Clee (Duncan, 1906), Hopesay Hill (R.F. Shoubridge, 1998) and the Long Mynd (M. Lawley, 2003).



***Mylia anomala*** (Hook.) S.F. Gray

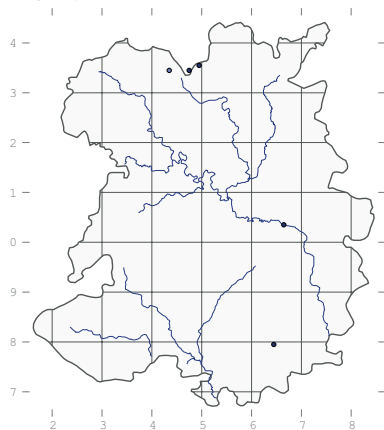
**Anomalous Flapwort**

First records: F. Rose, 1959, Wem Moss and Clarepool Moss.

Scattered records largely associated with the species' primary habitat of bog or wet heath. Well known at Cramer



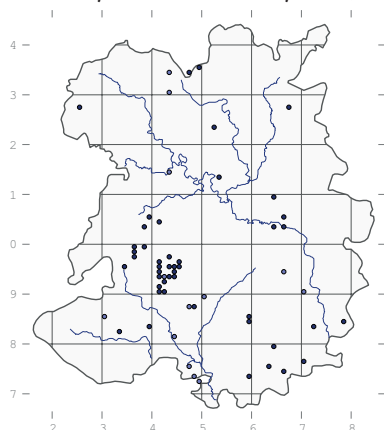
Gutter (firstly by M.J. Wigginton in 1981), Wem Moss, Whixall Moss (G.G. Graham, 1960) and once rather anomalously recorded on Benthall Edge by the BBS in 1992.



***Calypogeia fissa* (L.) Raddi**  
**Common Pouchwort**

First record: E.A. Wilson, 1950, Whixall Moss.

In rather acid habitats such as upland woods, heaths, along streams in the batches of the Long Mynd and in lowland mires. It has been recorded in M35 *Montia fontana* rills in Carding Mill Valley (R. Tapper, 1983). In the mosses, it has been recorded at Clarepool Moss (F. Rose, 1959), Wem Moss (M.E. Newton, 1999) and at Whixall Moss many times. At Earl's Hill it grows along the sides of the Habberley Brook (R.D. Porley, 1986).



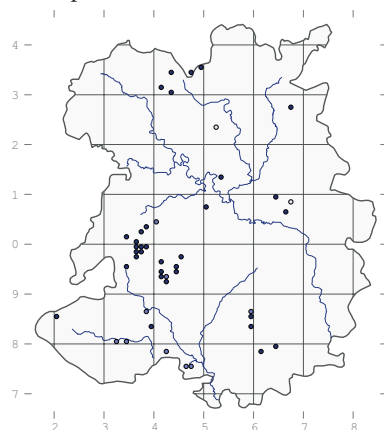
***Calypogeia muelleriana***  
(Schiffn.) Müll. Frib.

**Müller's Pouchwort**

First record (as *C. azurea*): Hamilton, 1899, Grinshill Hill.

In a variety of acid habitats such as lowland mires at Clarepool Moss (D.H. Wrench, 2008), Shomere Pool (M. Lawley, 2003), Smithy Moor (Wrench, 2007), Wem Moss (E.F. Warburg, 1960) and Whixall Moss (N.G. Hodgetts, 1992) and in upland sites such as the Brown Clee (J.B. Duncan, 1920), the

Long Mynd (J.G. Duckett, 1974) and the Stiperstones (M.E. Newton, 1992).



***Calypogeia neesiana* (C. Massal. & Carestia) Müll. Frib.**  
**Nees's Pouchwort**

Only one record: on Whixall Moss (N.G. Hodgetts & J.W. Bates, 1992).

***Calypogeia sphagnicola***  
(Arnell & J. Perss.) Warnst. & Löske

**Bog Pouchwort**

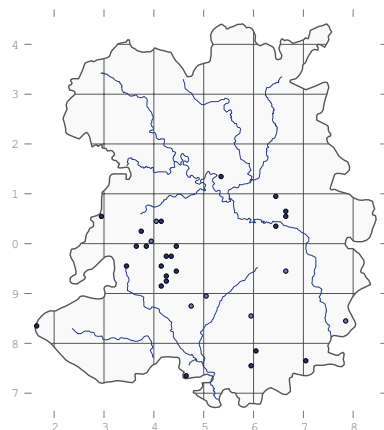
On Wem Moss in 1959 (F. Rose & D. Bellamy) and subsequently by M.E. Newton on Whixall Moss (1993) and on the Long Mynd and Catherton Common (M. Lawley, 1998).

***Calypogeia arguta* Nees & Mont.**

**Notched Pouchwort**

First record (as *Kantia arguta*): J.B. Duncan, 1910, Callow Hollow.

By streams and in grassland on most of the hills. At Earl's Hill it is rare on the banks of the Habberley Brook (R.D. Porley, 1986), and it has been recorded recently in places like Haughmond Hill (M.F. Godfrey, 2000), Lydebrook Dingle (M.E. Newton, 1994) and Tantree Bank (D.H. Wrench, 2007).

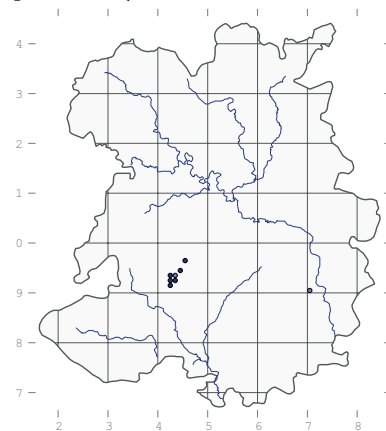


***Leiocolea bantriensis***  
(Hook.) Jörg.

**Bantry Notchwort**

First record (as *Lophozia mulleri* var. *bantriensis*): W.G. Travis, 1909, Carding Mill Valley.

Nearly all of the records are clustered in the Carding Mill Valley, Ashes Hollow, Long Mynd area with a single outlier near Bridgnorth (M.E. Newton, 1971). Most typically found in calcareous flushes and fens this species is restricted to more or less permanently wet sites.



***Leiocolea collaris* (Nees.)**

Schjakov.

**Mountain Notchwort**

In base-rich flushes, recorded only on Llynclys and Llanymynech Hills (J.A. Paton, 1960 & M. Lawley, 2007) and in Ashes Hollow (N.G. Hodgetts, 1998).

***Leiocolea badensis* (Gott.) Jörg.**

**Scarce Notchwort**

Known in just four sites: Benthall Edge (J.W. Bates, 1992), Wenlock Edge (A.R. Perry, 1995), Oretton Quarries (M. Lawley, 1998) and Titterstone Clee (J.D. Sleath, 1999).

***Leiocolea turbinata* (Raddi)**  
H. Buch

**Top Notchwort**

First record (as *Lophozia turbinata*): J.B. Duncan, 1906, Alveley.

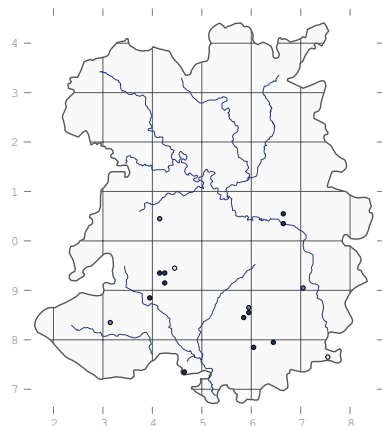
In limestone grasslands and damp limestone woodlands. Well known on Wenlock Edge, where it was first recorded by Duncan in 1913, Benthall Edge (Duncan, 1913), on the limestone in the north-west (e.g. at Craig Sychtyn, M. Lawley, 2002), and around Oretton (Lawley, 1998).

***Jungermannia atrovirens***  
Dumort.

**Dark-green Flapwort**

First record: J.B. Duncan, 1906, the Long Mynd and Wyre Forest.

By streams and in flushes on calcareous substrates. There are recent records for Benthall Edge (N.G. Hodgetts, 1992), Bringewood Chase (A.R. Perry, 1994), Wenlock Edge (S. Kingsbury, 1998), Titterstone Clee (J.D. Sleath, 1999) and Cramer Gutter (M. Lawley, 2001).



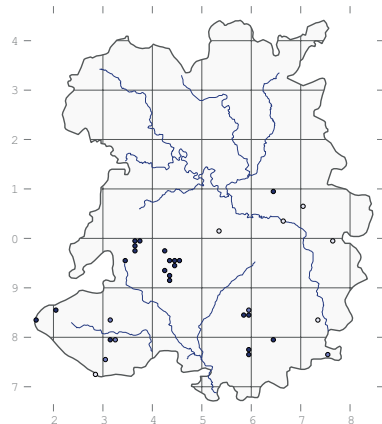
***Jungermannia pumila*** With.  
**Dwarf Flapwort**

First record: J.B. Duncan, 1906, Titterstone Clee and Hampton Loade.

By streams and on rocks in humid woodland. It is well known in the Wyre Forest, where it was first recorded by Duncan in 1910, and there are recent records for the vicinity of Church Stretton (SO49, M.E. Newton, 1978), Maesgwn (SO2388, M. Lawley, 1999) and Chorley (SO6983, Lawley, 2011).

***Nardia scalaris*** Gray  
**Ladder Flapwort**

First record (as *Jungermannia scalaris*): Williams, c. 1800, Acton Burnell Hill.



Usually on damp, acidic mineral soils, often as a pioneer species. Good places to look for it include batches on the Long Mynd (first recorded there by Hamilton, conf. S.M. Macvicar, 1890),

on the Stiperstones (e.g. SO369981, N.G. Hodgetts, 2002) and Titterstone Clee (Hodgetts, 1996).

***Nardia geoscyphus*** (De Not.)  
Lindb.

**Earth-cup Flapwort**

First record: D.G. Long, 1975, Sweeney Mountain.

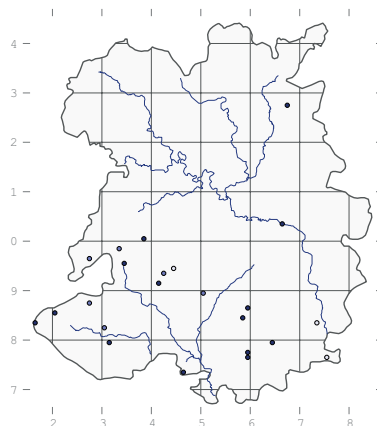
Two other records: Cramer Gutter (A.R. Perry, 1994) and Titterstone Clee (SO609787, J.D. Sleath, conf. G.P. Rothero, 1999, BBSUK).

***Solenostoma gracillimum***  
Sm.

**Crenulated Flapwort**

First record (as *Jungermannia gracillima*): Hamilton, 1890, 'Church Stretton.'

A pioneer species of base poor soil or rock; not uncommon on the hills. Good places to look for it include Benthall Edge (J.W. Bates, 1992), Rock of Woolbury (A.R. Perry, 1995), Rhos Fiddle (S. Kingsbury, 1998) and Titterstone Clee (D.H. Wrench, 2004).



***Solenostoma hyalinum***  
(Lyell) Mitt.

**Transparent Flapwort**

Recorded (as *Jungermannia hyalina*) only at Callow Hollow (J.G. Duckett, 1975).

***Saccogyna viticulosa*** (L.)  
Dumort.

**Straggling Pouchwort**

First record (as *Jungermannia viticulosa*): Williams, c. 1800, 'on Cound Moor.'

In damp places in woodland, at the eastern edge of its range in Shropshire. Well known in the Wyre Forest, where it was first recorded by J.B. Duncan in 1906, and also recently recorded at Rhos Fiddle (S. Kingsbury, 1999) and Bury Ditches (M. Lawley, 2001).

***Gymnomitrium obtusum***  
Lindb.

**White Frostwort**

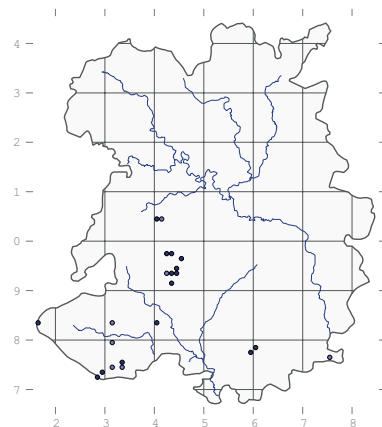
'On scree, east side of Titterstone Clee Hill', SO598782, J.D. Sleath, 2000, BBSUK. A predominantly northern and western species of sheltered rock, this would seem to be an eastern outlier, on the edge of its range.

***Marsupella emarginata***  
(Ehrh.) Dumort.

**Notched Rustwort**

First records: J.B. Duncan, 1906, the Long Mynd and Titterstone Clee.

In wet gravelly or rocky conditions, sometimes quite abundant when present. It is well known on the Long Mynd, in Ashes Hollow (J.G. Duckett, 1974), Carding Mill Valley and Townbrook Hollow (M.E. Newton, 1994), Titterstone Clee (e.g. N.G. Hodgetts, 1976) and in woods in the south-west, such as Bucknell Wood (R.F. Shoubridge, 1998).



**Mosses**

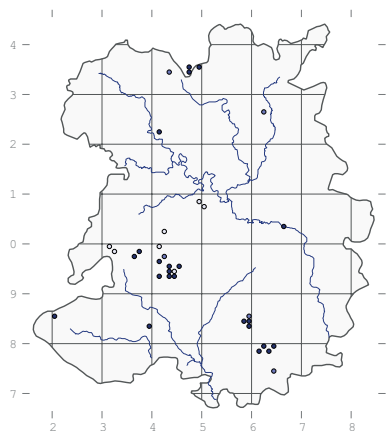
***Sphagnum papillosum***  
Lindb.

**Papillose Bog-moss**

First record: Hamilton, 1892, Stapeley Hill.

On deep peat soils in ombrotrophic conditions in lowland raised bogs and upland blanket bogs. In the lowlands it is now known only at Whixall Moss and Wem Moss (M.E. Newton, 1999), where it occurs in M18 S. *papillosum* mire. The Whixall Moss plants often have indistinct papillae (N.G. Hodgetts, 2007) which causes confusion over identification. In the past it was recorded at other mosses such as Bomere Pool (R.D. Benson, 1897), Clarepool Moss (F. Rose, 1959) and Brown Moss (M.E. Newton, 1978). It is now more frequent in upland

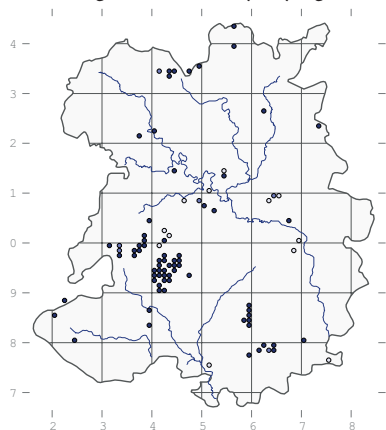
vegetation such as M15 *Trichophorum germanicum* at Cramer Gutter and M6 *Carex echinata* at Darnford (R. Tapper, 1983). Other good places to look for it include Gatten Plantation, Hopesay Hill (S.D.S. Bosanquet) and Rhos Fiddle.



### *Sphagnum palustre* L. Blunt-leaved Bog-moss

First record (as *S. latifolium*): Williams, c. 1800, 'bogs, common.'

Widespread and more tolerant of base-rich conditions than most bog-mosses, in a range of habitats. On the hills it is recorded in M6 *Carex echinata* on the Stiperstones (M.E. Newton, 1992) and Long Mynd (D.A. Callaghan, 2012); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* in Gogbatch (C.M. Owen, 1983) and on the Stiperstones (Newton, 1992); and W4 *Betula pubescens* woodland on Haughmond Hill. In the lowlands it grows in M25 *Molinia caerulea* at Black Coppice and in W4 woodland at Brown Moss, Calcott Moss and many other raised bogs that are slowly drying out.



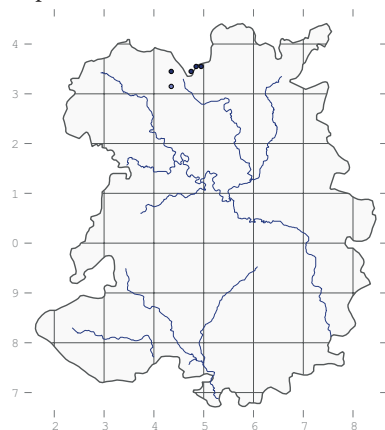
### *Sphagnum magellanicum* Brid.

#### Magellanic Bog-moss

First record (as *S. medium*): Hamilton, 1905, Whixall Moss (SHY).

Restricted to lowland raised bogs, where it occurs on the hummocks that develop on undisturbed bog surfaces,

raised permanently above the water level on a floating mat of peat. This is typically M18 *Sphagnum papillosum* mire, but there are very few examples of it remaining in the county. It grows on Wem Moss, where it was first recorded by F. Rose and D.J. Bellamy in 1959, and on Whixall Moss, where it is very rare but still present in some of the least disturbed areas. It was formerly on Whattall Moss (Sinker, 1962) but has gone from there because of drainage and afforestation. However, it did appear on Clarepool Moss after birch woodland was cleared (I. Diack, 2008). Here the habitat does not seem very suitable, as it was in a hollow in bare, dry peat, but plants can be unpredictable.

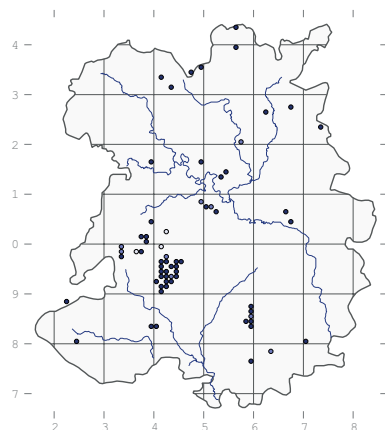


### *Sphagnum squarrosum* Crome

#### Spiky Bog-moss

First record: Hamilton, 1892, Haughmond Hill.

More tolerant of light shade and higher levels of minerals, and therefore frequent in W4 *Betula pubescens* woodland in places such as Brown Moss, Bomere Pool and Shomere, and in W5 *Alnus glutinosa* at Blake Mere and Oss Mere. It has also been recorded in M6 *Carex echinata* at Darnford (R. Tapper, 1983); S24 *Calamagrostis canescens* fen at Oss Mere (M.J. Wigginton, 1979); and S26 *Phragmites australis* reedbeds there in 2005.

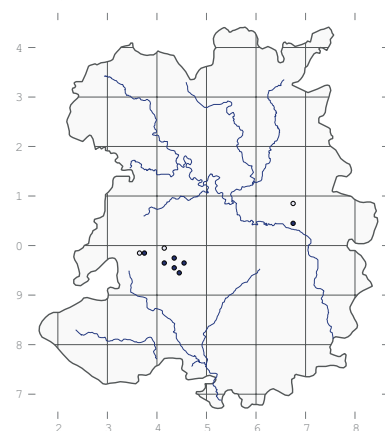


### *Sphagnum teres* (Schimp.) Ångstr.

#### Rigid Bog-moss

First record: R.D. Benson, 1892, Wilderley Hill (SHY).

An uncommon plant of base-rich flushes on the hills, recorded in Carding Mill Valley (N.G. Hodgetts, 2006), Dale Coppice (SJ671047, 2007), Hawkham Hollow (M.E. Newton, 1994), on the Lawley (W.H. Painter, 1900) and on the Stiperstones (Benson, 1902 and SO370981, F.J. Rumsey, 2004).



*Sphagnum subnitens* in Gatten Plantation



*Sphagnum denticulatum* at the Stiperstones



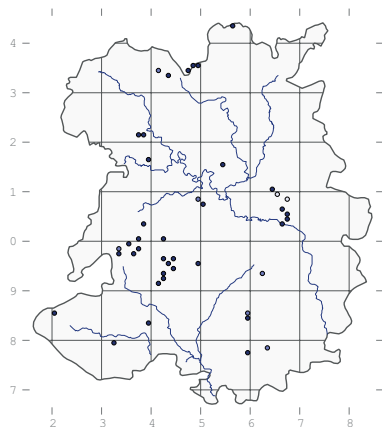
## *Sphagnum fimbriatum*

Wilson

### Fringed Bog-moss

First record: R.D. Benson, 1891, Whixall Moss (SHY).

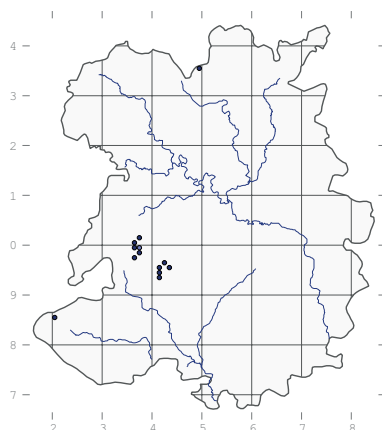
On drained mires in the lowlands and in upland woodland and heath. It is particularly characteristic of scrubbed-over mires, either W4 *Betula pubescens* woodland, as at Shomere, or W5 *Alnus glutinosa*, as at Haughmond Abbey Wood and Oss Mere. M.J. Wigginton (1979) once recorded it in S24 *Calamagrostis canescens* at Oss Mere, but this is quite atypical. It is also found in flushes on the Long Mynd (initially by J.G. Duckett in 1974) and on other hills such as Titterstone Cleve (F. Rose, 1987) and the Stiperstones (M.E. Newton, 1992).



## *Sphagnum russowii* Warnst.

### Russow's Bog-moss

First record: J.S. Robertson, 1968, the Stiperstones.



In several places on the Stiperstones, most spectacularly on a NW-facing slope at Perkins Beach, where it is abundant on a steep hillside, with huge mounds maintained entirely by rainfall and humidity in H21 *Sphagnum capillifolium* heath. *Sphagnum russowii* has also been recorded in Mytton Dingle and Crowsnest Dingle (M.E.

Newton, 1992) and in the former Gatten Plantation. Elsewhere it has been recorded at Wild Moor (Newton, 1994) and Rhos Fiddle (S. Kingsbury, 1998). In 2007 it was found at Whixall Moss by M.F. Godfrey (conf. M.O. Hill).

## *Sphagnum quinquefarium*

(Lindb. ex Braithw.) Warnst.

### Five-ranked Bog-moss

First records: M.E. Newton, 1992, Mytton Dingle and Perkins Beach.

On north-facing slopes in the hills, on well-drained soils in areas with over 1,000 mm of rainfall per annum, and generally in open woodland. Rare in some of the dingles on the Stiperstones in H21 *Sphagnum capillifolium* heath, on the Long Mynd (Newton, 1994) and on a trackside bank at Hopton Titterhill (SO355775, J. Clayfield, 2009, conf. N.G. Hodgetts, BIRM).

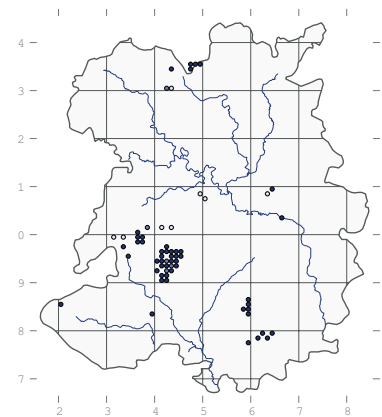
## *Sphagnum capillifolium*

(Ehrh.) Hedw.

### Red Bog-moss

First record: Williams, c. 1800, 'bogs.'

One of the most distinctive bog-mosses and a useful indicator of the various bog communities. It grows on hummocks in raised mires, indicating ombrotrophic conditions and is typical of M18 *S. papillosum* raised mire, but it also occurs in the better stands of M2 *S. fallax*, as at Clarepool Moss. On the Stiperstones it is recorded in M6 *Carex echinata* (M.E. Newton, 1992) and the rare examples of H21 *S. capillifolium* on the north slopes of some of the dingles. At Cramer Gutter it is frequent in the boggy parts of the H15 *Trichophorum germanicum* heath. C.M. Owen & R. Tapper (1983) also recorded it in M23 *Juncus effusus*, M29 *Potamogeton polygonifolius*, and M35 *Montia fontana* on the Long Mynd. The subspecies have been inconsistently recorded.

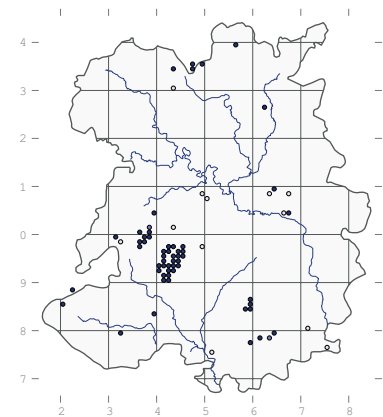


## *Sphagnum subnitens* Russow & Warnst.

### Lustrous Bog-moss

First record: Mr F. Westcott, 1848, 'near the river, Ludlow' (Hamilton, 1902).

In less acid conditions than many bog-mosses, often in M23 *Juncus effusus*, as at Rhos Fiddle and the Stiperstones, and M15 *Trichophorum germanicum* at Cramer Gutter. Also in lowland mires such as Wem Moss (first recorded by F. Rose in 1959) and Whixall Moss (R.D. Benson, 1902), where it occurs in M2 *Sphagnum fallax* lawns.

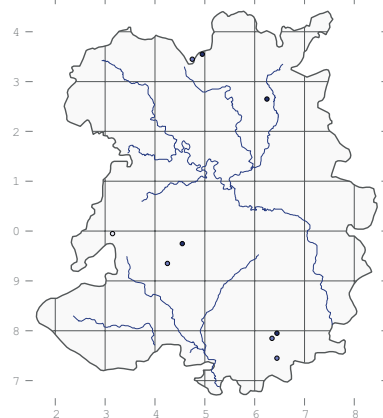


## *Sphagnum compactum* Lam. & DC.

### Compact Bog-moss

First record (as *S. rigidum* var. *compactum*): Hamilton, 1892, Stapeley Hill (SHY).

In flushes on the hills or in base-rich lowland mires. At Cramer Gutter it occurs in M15 *Trichophorum germanicum* (N.G. Hodgetts, 2001) and at Hodnet Heath in M16 *S. compactum* mire (M.F. Godfrey, 2011). There are also records for Ashes Hollow (J.G. Duckett, 1967-'74), Gogbatch (S. Kingsbury, 1999), Wem Moss (Sinker, 1960) and Whixall Moss (M.E. Newton, 1993).



### *Sphagnum subsecundum* Nees

#### Slender Cow-horn Bog-moss

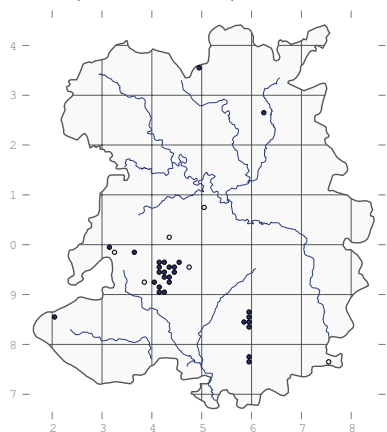
There are several records made between 1891 and 1998. The taxonomy of the species has, however, been subject to much revision so all of the historical records for *S. subsecundum* sensu stricto are regarded here as unconfirmed.

### *Sphagnum inundatum* Russow

#### Lesser Cow-horn Bog-moss

First record: Hamilton, 1892, Stapeley Hill (SHY).

In mildly base-rich bogs, mainly on the hills but also in a few lowland raised mires. It occurs in several places on the Long Mynd (first recorded by R.D. Benson in 1897), where it occurs in M6 *Carex echinata*, M23 *Juncus effusus* and M35 *Montia fontana* flushes (D.A. Callaghan, 2012). It has also been recorded on the Stiperstones (Benson, 1902), and has been recorded at Caer Caradoc (originally by Benson, 1902), Brown Clee (M. Lawley, 2007), Rhos Fiddle (S. Kingsbury, 1998) and Titterstone Clee (N.G. Hodgetts, 1996). In the lowlands there are records for Shomere (Hamilton, 1893), Whixall Moss (E.J. Rumsey, 2004) and the Wyre Forest (Hamilton, 1902).



### *Sphagnum denticulatum* Brid.

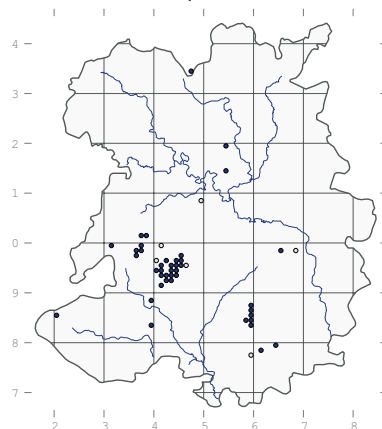
#### Cow-horn Bog-moss

First record: Hamilton, 1892, Titterstone Clee (SHY).

In similar places to *S. inundatum* but generally commoner. It has been recorded in M15 *Trichophorum germanicum* at Cramer Gutter (N.G. Hodgetts, 2001) and in M23 *Juncus effusus* on Haughmond Hill.

It has also been found at Bomere Pool (Hamilton, 1902), Brown Clee (A.W. Weyman, 1893 – D.A. Callaghan, 2014), in numerous places on the Long Mynd

(R.D. Benson, 1892 – Callaghan, 2013), Cramer Gutter (Wigginton, 1981 – Hodgetts, 2001), Dale Coppice, Hopesay Hill (R.F. Shoubridge, 1998 – S.D.S. Bosanquet, 2004), Linley (W.H. Painter, 1902), Rhos Fiddle (S. Kingsbury, 1998 – M. Lawley, 2002), Shawbury Heath (D.H. Wrench, 2007), Shirlett Common, Silvington Hill (Wrench, 1994), Stapeley Hill, the Stiperstones (M.E. Newton, 1992), Titterstone Clee (Hamilton, 1892 – Wrench, 1994), Wem Moss (Newton, 1999) and Wilderley Hill (Benson, 1892).

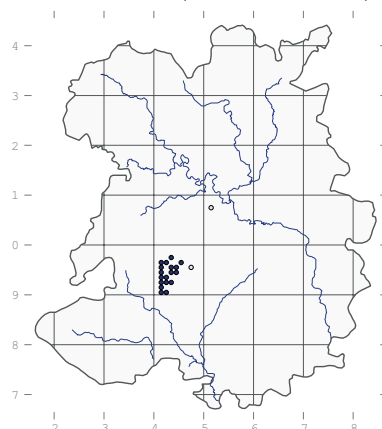


### *Sphagnum contortum* Schultz

#### Twisted Bog-moss

First record (as *S. laricinum*): Hamilton, 1893, Betton Pool (SHY).

Probably the most base-demanding of the *Sphagna*, it is normally confined to fens and flushes. The only current sites for it are on the Long Mynd, where it occurs in M23 *Juncus effusus* (D.A. Callaghan, 2012). A good place to look for it is on Wild Moor (SO4296, E.J. Rumsey, 2007). It was also once found on Caer Caradoc (R.D. Benson, 1898).



### *Sphagnum platyphyllum* (Lindb. ex Braithw.) Warnst.

#### Flat-leaved Bog-moss

Recently found in a few places on the Long Mynd (D.A. Callaghan, 2012), including Wild Moor, Callow Hollow and Lightspout Hollow.

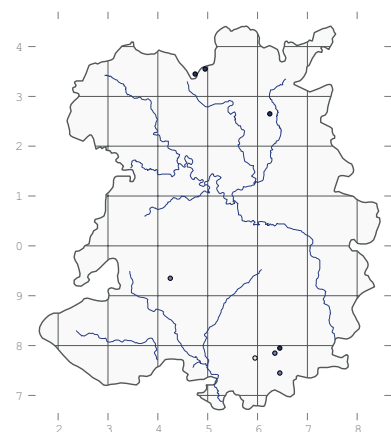
### *Sphagnum tenellum* (Brid.) Bory

#### Soft Bog-moss

First Record: A.W. Weyman (det. Hamilton), 1894, Titterstone Clee (SHY).

In M2a *Sphagnum cuspidatum* bog pools and M16 *S. compactum* at Hodnet Heath (M.F. Godfrey, 2011) and M15 *Trichophorum germanicum* at Cramer Gutter.

There are just four current sites: Cramer Gutter, where it was first recorded by F. Rose in 1987, Hodnet Heath (Rose, 1965), Wem Moss (Rose, 1959) and Whixall Moss (E. Armitage, 1898). It was also once recorded on the Long Mynd, in Ashes Hollow, by J.G. Duckett in 1974.



### *Sphagnum cuspidatum* Ehrh. ex Hoffm.

#### Feathery Bog-moss

First record: R.D. Benson, 1891, Whixall Moss.

Usually submerged in M2a *S. cuspidatum* bog pools, especially on Whixall Moss, where it is very abundant, but also in such places as Clarepool Moss and Rhos Fiddle. In the latter site it also occurs in wet H12 *Vaccinium myrtillus* heath and M23 *Juncus effusus* rush-pasture.

It was first recorded at Brown Moss by E.F. Warburg in 1957, but it died out and only returned when a scrape was dug in the heathland in 2007 (SJ56133938, conf. N.G. Hodgetts, BIRM). Several records of it in the intervening years were probably errors for *S. fallax* in the schwingmoor (pool 9). Other places for it include Clarepool Moss (where it was first recorded by Hamilton in 1900), Hodnet Heath (F. Rose, 1965) and Brown Clee (Sinker, 1958).

***Sphagnum pulchrum*** (Lindb. ex Braithw.) Warnst.

### Golden Bog-moss

First record (as *S. intermedium* var. *pulchrum*): H Boswell, 1882, Whixall Moss (OXF).

A rare plant of undisturbed bogs, in pools and hollows. It has been recorded in just three sites: Wilderley Green (R.D. Benson, 1892, conf. Hamilton, SHY), Wem Moss (F. Rose, 1959 – M.E. Newton, 1999) and Whixall Moss, where it occurs in a few places near Oaf's Orchard (SJ483355 & SJ485357, F.J. Rumsey, 2004).

***Sphagnum fallax*** (H. Klinggr.) H. Klinggr.

### Flat-topped Bog-moss

First record (as *S. intermedium*): Hamilton, 1892, Wilderley Hill.

This is one of the commoner species, being found throughout in a range of permanently damp habitats. Its most characteristic habitat is in M2b *Sphagnum fallax* lawns on the lowland mosses, including at Brown Moss, Clarepool Moss, Hodnet Heath, Lin Can Moss, Snipe Bog and Wem Moss.

It has also been recorded in H12 *Vaccinium myrtillus* heath at Rhos Fiddle; M6 *Carex echinata* in Catbatch (D.A. Callaghan, 2012);

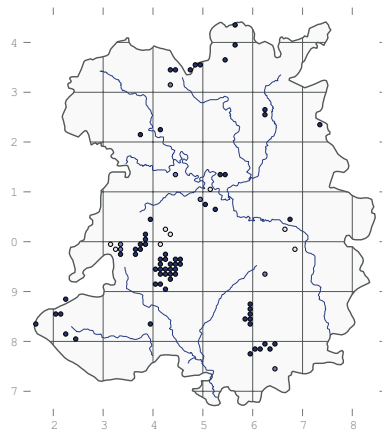


*Racomitrium lanuginosum*  
(Dan Wrench)



*Sphagnum pulchrum* at Whixall Moss

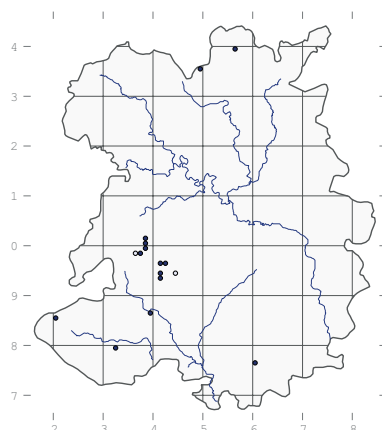
M15 *Trichophorum germanicum* at Cramer Gutter (N.G. Hodgetts, 2001); M16 *Sphagnum compactum* at Hodnet Heath (M.F. Godfrey, 2011); M23 *Juncus effusus* at Rhos Fiddle and on the Long Mynd (C.M. Owen, 1983); M25 *Molinia caerulea* at Steel Heath; M35 *Montia fontana* in Carding Mill Valley and Wild Moor (both R. Tapper, 1983); M4 *Carex rostrata* at Clarepool Moss and Snipe Bog; M6 *C. echinata* at Upper Darnford (Tapper, 1983); S9 *C. rostrata* at Wildmoor Pool (Tapper, 1983); U5 *Nardus stricta* at Rhos Fiddle; and W4 *Betula pubescens* at Brown Moss, Haughmond Hill, Lin Can Moss, Bomere Pool (M.J. Wigginton, 1979); Shomere and Oss Mere.



***Sphagnum flexuosum*** Dozy & Molk.

### Flexuous Bog-moss

First records (as *S. recurvum* var. *amblyphyllum*): R.D. Benson, 1902, the Stiperstones and the Long Mynd.



In more mineral-rich sites than most bog-mosses, mostly recorded in the hills in places like Black Hill (J. Clayfield, 2009), Hopesay Hill (S.D.S. Bosanquet), Rhos Fiddle (S. Kingsbury, 1998) and Titterstone Clee (D.H. Wrench, 2004). In the mosses it is only recorded at Brown Moss (R.F. Shoubbridge, 1990) and Whixall Moss (M.E. Newton, 1993). The only communities it has so far been

recorded in M6 *Carex echinata* and M23 *Juncus effusus* in Catbatch (D.A. Callaghan, 2012).

***Sphagnum angustifolium*** (C.E.O. Jensen ex Russow) C.E.O. Jensen

### Fine Bog-moss

First record: N.G. Hodgetts, 1984, Clarepool Moss.

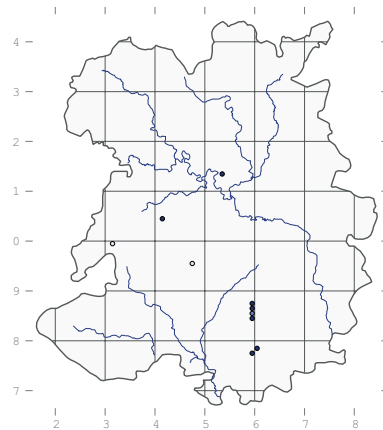
Not recorded until recently owing to taxonomic uncertainties. It occurs on more mineral-rich substrates than *S. fallax*, in places like Clarepool Moss (most recently by D.H. Wrench in 2008), on the Stiperstones (Wrench, 2007), Shomere Pool (Wrench, 2003) and Whixall Moss (M.E. Newton, 1997).

***Andreaea rupestris*** Hedw.

### Black Rock-moss

First record: W. Borrer, 1861, 'Caer Caradven' (det. B.M. Murray, BM).

Well known on acid rocks on Brown Clee (first recorded by A.W. Weyman in 1891, BM) and Titterstone Clee (Hamilton, 1892). At Oaks Wood it has been recorded on conglomerate outcrops in W16 *Quercus petraea* woodland (Sinker & Perring, 1966 – R.D. Porley, 1986). It was recently found on Haughmond Hill (M.F. Godfrey, 2006), where it occurs on Longmyndian shales in U1 *Rumex acetosella* grassland. There is also an old record for Stapeley Hill (Hamilton, 1892, NMW, SHY). Some recorders have noted that plants are ssp. *rupestris*.



***Andreaea rothii*** F. Weber & D. Mohr

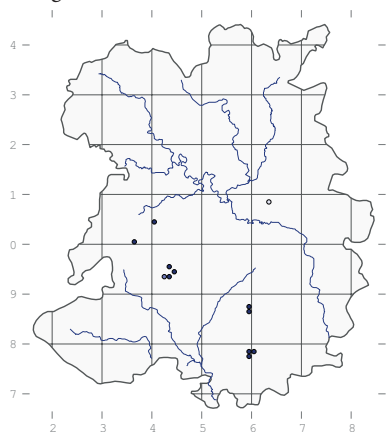
### Dusky Rock-moss

First record: H. Webb, c. 1866, Clee Hills (det. Hamilton, 1899).

On rock outcrops on the Long Mynd (M.O. Hill, 1975), Earl's Hill (R.D. Porley, 1986), the Stiperstones (M.E. Newton, 1992), the Wrekin (G.H. Griffiths, 1870 and R.D. Benson,



1891, conf. B.M. Murray, BM), and Titterstone Clee, where it has recently been recorded by J.D. Sleath in 2000. The subspecies *rothii* has been noted on Earl's Hill and the Wrekin, whereas ssp. *falcata* (Schimp.) Lindb. has been found on Titterstone Clee (N.G. Hodgetts, 1996).



***Atrichum crispum*** (James) Sull.

### Fountain Smooth-cap

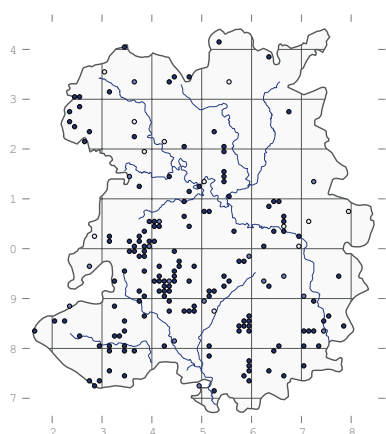
First record: A.R. Perry, 1994, Bringewood Chase.

On bare ground by the River Onny near Craven Arms (SO442805, P. Martin, 1994, conf. T.L. Blockeel, BBSUK) and also subsequently recorded at Rock of Woolbury (Perry, 1995) and Bryn-mawr (L.H.A. Fraser, 2008). An introduced species which is typically associated with streamside habitats.

### *Atrichum undulatum* (Hedw.) P. Beauv.

### Common Smoothcap

First Record: Williams: c. 1800, 'Woods and ditch banks, common.'



A common species distributed throughout the county. It is most associated with woodlands on circum-neutral soils but is also occasionally found on heath and in grassland. It is recorded in MG5 *Festuca rubra* at

Hayton's Bent (D.H. Wrench, 1995); MG9 *Holcus lanatus* at The Glade, Easthope Wood; W7 *Lysimachia nemorum* at Fastings Coppice; W8 *Fraxinus excelsior* at Haughmond Hill, Oaks Wood and Stoke Wood; and W10 *Quercus robur* scrub at Muxton Bridge (Trueman, 1981).

### *Oligotrichum hercynicum* (Hedw.) Lam. & DC.

### Hercynian Haircap

Just one site: by a path at the Rock of Woolbury (SO3179, D.H. Wrench, conf. A.R. Perry, 1995). This northern and western species is largely confined to uplands where it grows on loose, acidic mineral soils. It is probably at the eastern extent of its range in Shropshire.

### *Pogonatum nanum* (Hedw.) P. Beauv.

### Dwarf Haircap

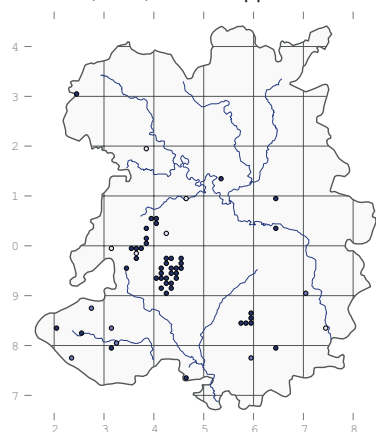
First record (as *P. subrotundum*): Williams, c. 1800, 'ditch banks.'

A species which has declined dramatically throughout Britain and is now largely confined to the coast. There are no recent records, but it has been recorded at Broom Hill (R.D. Benson, 1893), Ellerdine and Isombridge (both R. Anslow, 1870), Westcott (Benson, 1893) and Woodside (J.B. Duncan, 1913).

### *Pogonatum aloides* (Hedw.) P. Beauv.

### Aloe Haircap

First record (as *Polytrichum aloides*): Hamilton, 1889, Redhill Coppice.



A colonist of bare, acid soils where it can tolerate quite deep shade and remarkably steep and unstable slopes which may be stabilised by its persistent protonema. It is quite common in the county, especially in the middle and south. A good place to look for it is in batches on the Long Mynd such as Ashes Hollow (first recorded there by

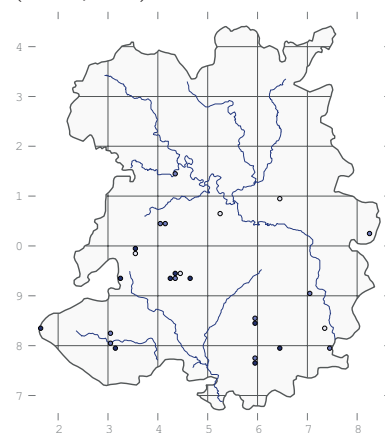
J.G. Duckett in 1974) and Carding Mill Valley (Hamilton, 1901).

### *Pogonatum urnigerum* (Hedw.) P. Beauv.

### Urn Haircap

First record: Williams, c. 1800, 'in a boggy field on the south side of Berrington' [Snipe Bog].

On acid, mineral substrates, frequently in disturbed habitats like quarries and bonfire sites. It is well known on the Long Mynd (where it was first recorded by Hamilton in 1893), the Stiperstones (Hamilton, 1906) and Titterstone Clee (Anon., 1957).



### *Polytrichastrum alpinum* (Hedw.) G.L. Sm.

### Alpine Haircap

First record (as *Pogonatum alpinum*): Williams, c. 1800, 'at the top of the Wrekin and the Caradoc hills.'

Formerly recorded on some of the higher hills, including Titterstone Clee (Hamilton, 1892, SHY), the Stiperstones and the Long Mynd (both Hamilton, 1893).

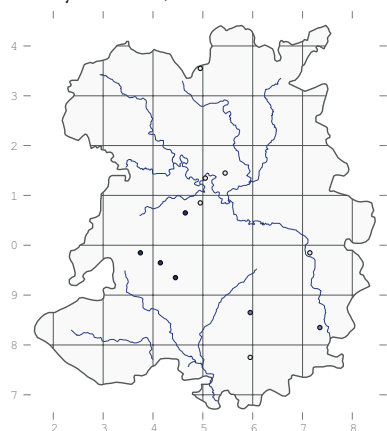
### *Polytrichastrum longisetum* (Sw. ex Brid.) G.L. Sm.

### Slender Haircap

First record (as *P. gracile*): Hamilton, 1884, Bomere Pool (SHY).

Typical of disturbed peat in forestry plantations, and formerly recorded in a number of sites both in the mosses and on the hills. Owing to confusion with *P. formosum* in the past some records seem unreliable (for instance, R. Anslow recorded it on the Ercall in 1865, but did not find *P. formosum*). However, records by Hamilton from Apley Park (1899), Haughmond Hill (1900), Underdale (1901) and Whixall Moss (1893); by J.B. Duncan at Highley (1910), Brown Clee (1913) and Titterstone Clee (1906); and A. Ley at Brown Clee (1893) all seem acceptable. It was recently found on a

patch of burnt peat on the Stiperstones (SO372988, M. Lawley, 2003, conf. G.P. Rothero, BBSUK) and subsequently on the Long Mynd and Lyth Hill (all Lawley, 2005-'09).

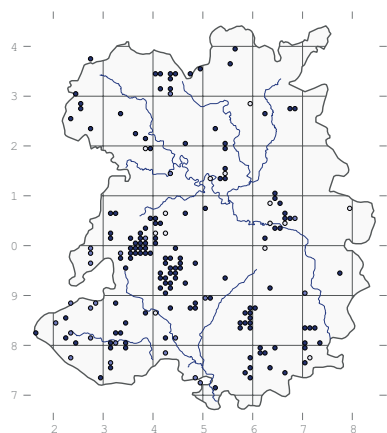


## *Polytrichastrum formosum* Hedw.

### Bank Haircap

First record (as *Polytrichum formosum*): R.D. Benson, 1893, Huglith Hill.

A very common species, most typical in deciduous woodland on acid soils, but also in a variety of other habitats such as lowland mires and even calcareous grassland. It has been recorded in CG10 *Helianthemum nummularia* in Minton Batch (R. Tapper, 1983); M2 *Sphagnum fallax* in a pool on Hodnet Heath (M.F. Godfrey, 2011); M23 *Juncus effusus* at Brook Vessons; M35 *Montia fontana* on Wild Moor (Tapper, 1983); U1 *Rumex acetosella* on Haughmond Hill; W10 *Quercus robur* on the Ercall; W16 *Q. petraea* in Oaks Wood and Sowdley Wood; and W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood.



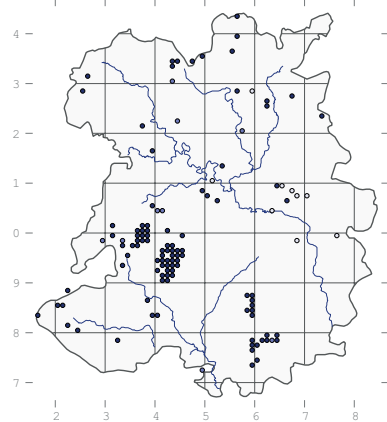
## *Polytrichum commune* Hedw.

### Silkwood

First record: Williams, c. 1800, 'moist woods and bogs.'

Again a very common species, typical of wet heaths but with quite a wide ecological amplitude, also being

found in woods, ditches and rather ruderal habitats. It is recorded in H12 *Vaccinium myrtillus* at Rhos Fiddle; M2 *Sphagnum fallax* at Rhos Fiddle and Snipe Bog; M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* in Ashes Hollow (C.M. Owen, 1983), Bomere Pool, Rhos Fiddle and elsewhere; U5 *Nardus stricta* on Titterstone Clee (A.K. Thorne, 1999); W4 *Betula pubescens* at Brown Moss, Lin Can Moss and Wem Moss; W6b *Salix × fragilis* at Shrawardine Pool; and W7 *Lysimachia nemorum* at Brook Vessons.

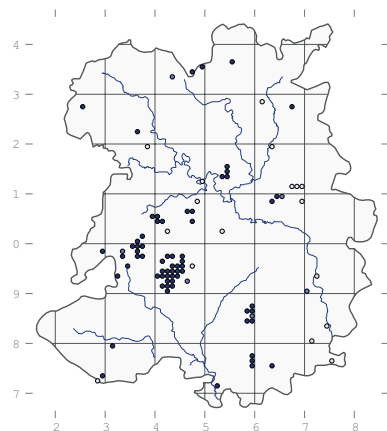


## *Polytrichum piliferum* Hedw.

### Bristly Haircap

First record: Williams, c. 1800, 'on Acton Burnell Park wall and the rocks of Haghamon Hill.'

Largely restricted to U1 *Rumex acetosella* grassland in places like Earl's Hill, Haughmond Hill, the Long Mynd and Lyth Hill. It also occurs on rock outcrops on the Stiperstones, on dry peat on Whixall Moss (first recorded by G.G. Graham in 1960) and Wem Moss (M.A. Bodley, 1999) and sometimes in disturbed habitats such as along the old Potteries Railway (W.H. Painter, 1907).

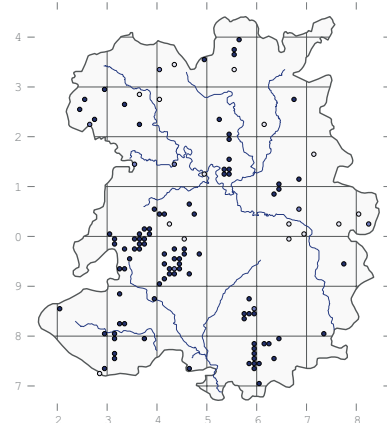


## *Polytrichum juniperinum* Hedw.

### Juniper Haircap

First record: Williams, c. 1800, 'on rocks thinly covered with earth and on sandy grounds – on Haghamon Hill.'

Similar to the previous species in both appearance and ecology. Recorded in CG10 *Helianthemum nummularia* in Minton Batch (R. Tapper, 1983); H9 *Deschampsia flexuosa* on the Long Mynd; H12 *Vaccinium myrtillus* on the Stiperstones; U1 *Rumex acetosella* in many places, including Earl's Hill, Haughmond Hill, Prees Heath and Titterstone Clee (A.K. Thorne, 1999); and W16 *Quercus petraea* woodland at Sowdley Wood.



## *Polytrichum strictum* Menzies ex Brid.

### Strict Haircap

First record: G.G. Graham, 1960, Whixall Moss.

On mires with deep peat. It is well known on Whixall Moss and on the adjacent Wem Moss (first recorded there by Sinker in 1962) and it was once recorded on Hodnet Heath (F. Rose, 1965). However, it has recently been reported from two sites in the hills – Rhos Fiddle (M. Lawley, 2002) and Novers Hill (N.G. Hodgetts, 2009).

## *Tetraphis pellucida* Hedw. Pellucid Four-tooth Moss

First record: Hamilton, 1893, Bomere Pool.

A common plant on well rotted wood, found throughout the county. In Whitwell Coppice it occurs in W8 *Fraxinus excelsior* woodland, but it is also found in more acid sites such as Wem Moss (M.E. Newton, 1999) and Clarepool Moss. A good place to look for it is on Earl's Hill, where it was first recorded by G.G. Graham in 1962.

***Tetrodontium brownianum***  
(Dicks) Schwaegr.

**Brown's Four-tooth Moss**

The only record for this species is from Loamhole Dingle (SJ663058, M. Lawley, 2003, det. G.P. Rothero, BBSUK). Usually found on vertical rock faces or under small overhangs on substrates which are slightly base-rich. This species is probably near its eastern limits in Shropshire but, given its rather cryptic habitat, may be worth searching for elsewhere.

***Buxbaumia aphylla* Hedw.**

**Brown Shield-moss**

This rare plant has only been found in Ashes Hollow (Sinkers, 1960 and G.G. Graham, 1961). It grows on well rotted wood, typically conifer. Its green parts consist of a persistent protonema and a couple of tiny leaflets around the archegonia and is virtually undetectable unless its large capsules are present.

***Diphyscium foliosum***  
(Hedw.) Mohr

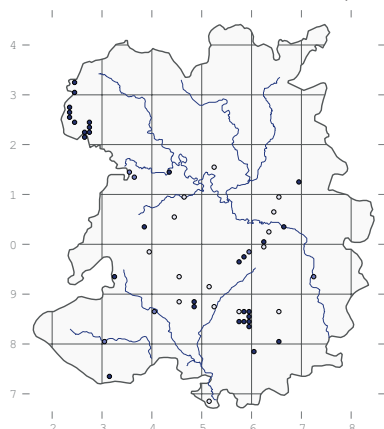
**Nut-moss**

Just three records: at Bringewood Chase (A. Ley, 1911); Earl's Hill (F. Rose, 1960); and Coed-Detton (M. Lawley, 1999). This tiny plant grows on acid soil pockets in rock faces, often more or less vertical and well sheltered. Without its rather over-sized, sessile capsule it is very difficult to detect and may be under-recorded.

***Encalypta streptocarpa***  
Hedw.

**Spiral Extinguisher-moss**

First record: R. Anslow, 1870, Steeraway.



A species of base-rich rocks and wall mortar, this very common moss is found throughout the county where there is suitable habitat. Good places to look for it include Benthall Edge

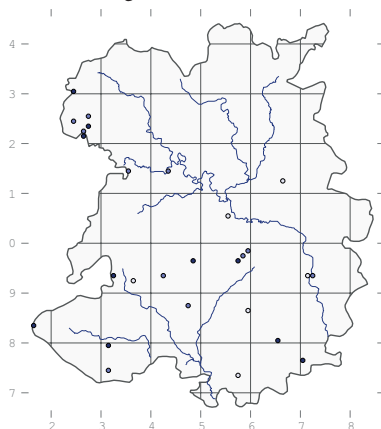
(first recorded there by Hamilton in 1903), Jones's Rough and Oreton (J.B. Duncan, 1903).

***Encalypta vulgaris* Hedw.**

**Common Extinguisher-moss**

First record: Williams, c. 1800, 'Cound churchyard wall'.

On base-rich substrates in places like Ashes Hollow (first recorded by J.B. Duncan in 1906), Llynclys Hill and Wenlock Edge (Duncan, 1913).



***Encalypta ciliata* Hedw.**

**Fringed Extinguisher-moss**

Collected by Littleton Brown (conf. J.J. Dillenius) in 1741 'in scopulis circa [on rocks about] Ludlow Castle' (Turner & Dillwyn, 1805) (OXF).

A much more upland species than the previous two it also has a much more western and northern distribution and was probably at its eastern limits in Shropshire.

***Funaria hygrometrica* Hedw.**  
**Common Cord-moss**

First record: Williams, c. 1800, 'ditch banks and on coal ashes, common'.

Common throughout the county as an ephemeral colonist of newly disturbed ground. It is particularly prevalent on bonfire sites and has been recorded in OV20 *Sagina procumbens* on pavements in Shrewsbury (M.F. Godfrey, 2011).

***Entosthodon muhlenbergii***  
Turn.

**Muhlenberg's Cord-moss**

There are just three records for this rare calcicole in the county (as *Funaria muhlenbergii*): at Llanymynech Hill (Anon, 1977), Alberbury (M.E. Newton, 1992) and Snailbeach (M. Lawley, 2001). It is an ephemeral species of recently disturbed ground.

***Entosthodon fascicularis***  
(Hedw.) Müll.Hal.

**Hasselquist's Hyssop**

First record (as *Funaria fascicularis*): Hamilton, 1889, 'Coalpit fields, Sutton, Shrewsbury. Only very small quantity found'.

A small, ephemeral plant of disturbed ground and cereal stubble. It was listed by R.D. Benson (1893) as 'common' but there are only a few records: hedge bank, Wrentnall Road (Benson, 1897), Alveley (J.B. Duncan, 1910), Stoneyhill (C.C. Townsend, 1992), a roadside verge in Coalbrookdale (M.E. Newton, 1992), Newcastle churchyard, and in woodland at Whitcliffe (both M. Lawley, 1998).

***Entosthodon obtusus* (Hedw.) Lindb.**

**Blunt Cord-moss**

First record (as *Entosthodon ericetorum*): Hamilton, 1891, Haughmond Hill.

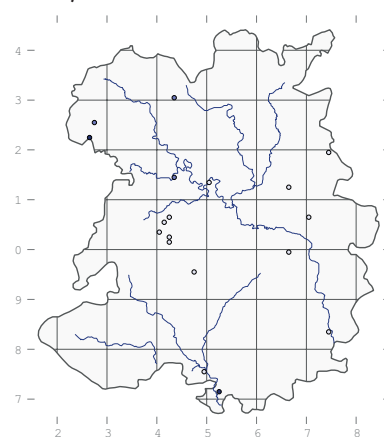
In wet peaty conditions in places such as the Long Mynd (Hamilton, 1893), Wyre Forest (J.B. Duncan, 1911), Brown Clee (G. Bloom, 1979), Grit Hill (M.E. Newton, 1980), Callow Hollow (N.G. Hodgetts, 1984) and Hampton Loade (M. Lawley, 2000).

***Physcomitrium pyriforme***  
(Hedw.) Brid.

**Common Bladder-moss**

First record: R. Anslow, 1870, Leegomery.

On recently disturbed soils and arable fields, but recorded only in M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton in 1979); but it is well known at this site, being 'plentiful on soil in the field adjoining the mere' in 1960 (Sinkers, E.F. Warburg & A.J.E Smith), and it has also been recorded at Sweeny Fen (E.A. Wilson, 1971). There are recent records of it on Llanymynech Hill (M.E. Newton, 1997) and High Meadow Farm (M. Lawley, 2002).



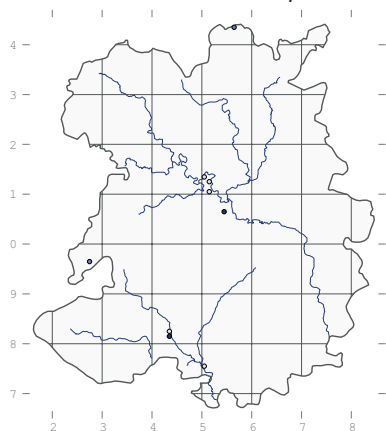


## *Aphanorhegma patens* (Hedw.) Lindb.

### Spreading Earth-moss

First record (as *Physcomitriella patens*): Hamilton, 1888, Mere Pool.

An ephemeral colonist of bare mud in the drawdown zone around pools and streams such as Mere Pool (Hamilton, 1888, SHY), Oss Mere (M.J. Wigginton, 1979), by the brook in Marrington Dingle (M.E. Newton, 1980), in the pool at Stokesay Castle (M. Lawley, 2002) and Venus Pool (Lawley, 2006).



## *Discelium nudum* (Dicks.) Brid.

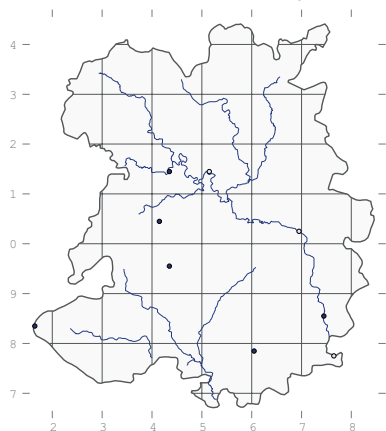
### Flag-moss

Recorded only at Preston Montford (M.E. Newton, 1979 – M.F. Godfrey, 2010) and Eaton-under-Heywood (N.G. Hodgetts, 1984). Consisting primarily of a persistent protonema growing on unstable clay, this species is virtually undetectable in the absence of sporophytes.

## *Schistidium rivulare* (Brid.) Podp.

### River Grimmia

First record (as *Grimmia apocarpa* var. *rivularis*): W.H. Painter, 1901, Coalport.



On rocks in fast flowing water; on the eastern edge of its range in Shropshire. It has been recorded in the Severn at Coalport, Monkmoor (Hamilton, 1900),

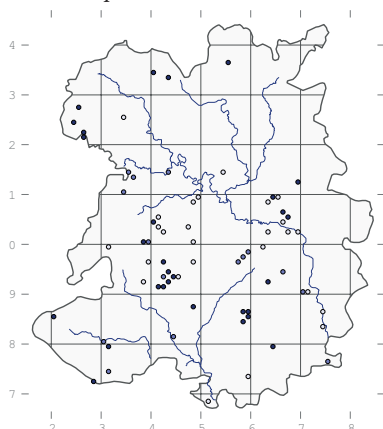
Preston Montford (E. Rom conf. N.G. Hodgetts, 2006) and Whithalls Wood (M. Lawley, 1998); in the Dowles Brook (J.B. Duncan, 1908); in a tributary of the Teme at Cefn Vron (Lawley, 1998); in the Habberley Brook at Earl's Hill (R.D. Porley, 1986); and in a stream on Titterstone Clee (J.D. Sleath, 1999).

## *Schistidium apocarpum* (Hedw.) Bruch & Schimp.

### Sessile Grimmia

First record (as *Grimmia apocarpum*): Williams, c. 1800, 'on rocks and stones about Comley and Longnor.'

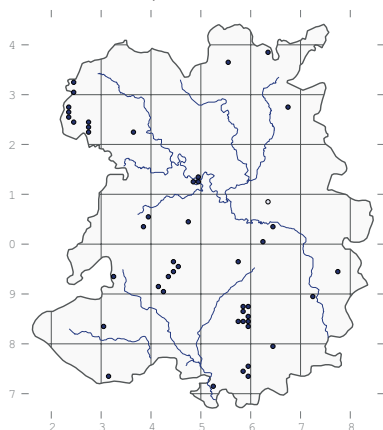
On moist shaded rocks and walls, often by rivers. Although in its typical form its identity is usually clear it does also have a number of rather less typical growth forms so care is needed when identifying plants. Some of the older records on the map should probably be of *S. crassipilum*.



## *Schistidium crassipilum* H.H. Blom

### Thickpoint Grimmia

First record: R.D. Benson, 1897, the Wrekin (det. M.F. Godfrey, STO).



The commonest member of its genus in lowland Britain, but not well known as it was only described in 1986.

It has been recorded in places such as Cramer Gutter (M. Lawley, 2000), Prees Heath (M.F. Godfrey, 2007) and the Quarry, Shrewsbury (Godfrey, 2010). It

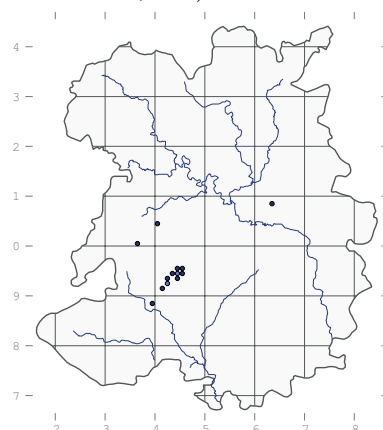
typically favours calcareous rock, and has been found as a part of the OV20 *Sagina procumbens* community on walls in Shrewsbury (Godfrey 2011).

## *Grimmia montana* Bruch & Schimp.

### Sun Grimmia

First record: E.B. Benson, 1892, 'Wrekin summit' (SHY).

A plant of exposed hard rocks it is difficult to distinguish from a number of other members of the genus in the field and needs to be checked under the microscope to confirm its identification. It is well known on the Wrekin (most recently by M. Lawley in 2006), the Long Mynd (originally by E. Clemmshaw, 1906, NMW) and Earl's Hill (R.D. Porley, 1986, conf. A.J.E. Smith), and it has once been recorded on the Stiperstones, on a south-facing slope in Mytton Dingle (SJ395005, M.E. Newton, 1992).

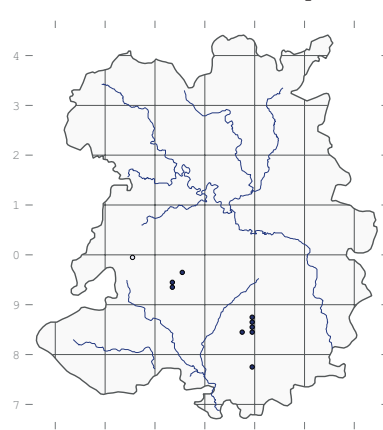


## *Grimmia donniana* Sm.

### Donn's Grimmia

First record (as *Grimmia Donii*): Hamilton, 1906, 'Pennerley, near Betton's Well, 1,500 ft.'

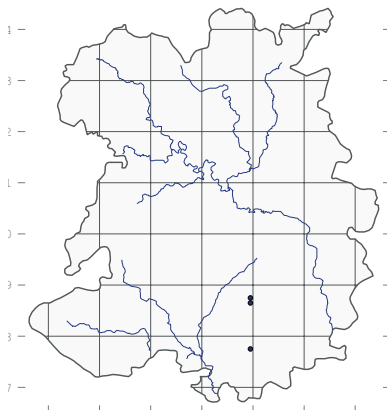
A montane species which has been recorded on Brown Clee (firstly by E.W. Jones, 1920), Titterstone Clee (Anon., 1957) and the Long Mynd (N.G. Hodgetts, 1988). It tends to be restricted to acidic rock outcrops.



***Grimmia incurva* Schwaegr.****Black Grimmia**

First record (as *Grimmia contorta*): A. Ley, 1893, 'on the granite, Titterstone Cleve Hill. Rare.'

Restricted to acidic rock outcrops on Titterstone Cleve (e.g. SO5977, N.G. Hodgetts, 1996) and Brown Cleve, where it was first recorded by J.B. Duncan in 1904 and is still present (SO594864, D.A. Callaghan, 2014).

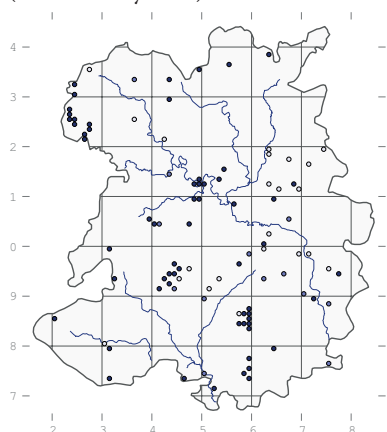
***Grimmia pulvinata* (Hedw.)**

Sm.

**Grey-cushioned Grimmia**

First record: Williams, c. 1800, 'on walls, common.'

Widespread on rock outcrops on the hills and on walls throughout, especially in humid places like bridges over rivers. It shows a preference for base-rich rocks and it appears to be absent from the Stiperstones area. It has been recorded in OV20 *Sagina procumbens* on walls in Shrewsbury (M.F. Godfrey 2011).

***Grimmia orbicularis* Bruch ex Wilson****Round-fruited Grimmia**

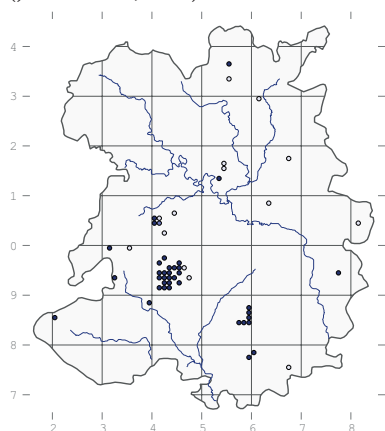
There are just four known sites for this rare, declining species: at High Rock, Bridgnorth (J.B. Duncan, 1914), Llyncllys Quarry (M. Lawley, 2004, det. S.D.S. Bosanquet, BBSUK), Loton Park

(SJ357137, Lawley, 2006) and 'near Ludlow' (C.H. Binstead, 1920).

***Grimmia trichophylla* Grev.****Hair-pointed Grimmia**

First record: R.D. Benson, May 1893, Longden.

A common species, found throughout the county, usually in upland habitats but occasionally in lowland sites on walls and acidic stonework. Good places to look for it include Titterstone Cleve (where it was first recorded by A.W. Weyman in 1893), the Long Mynd (Hamilton, 1897) and Earl's Hill (J.G. Duckett, 1975).

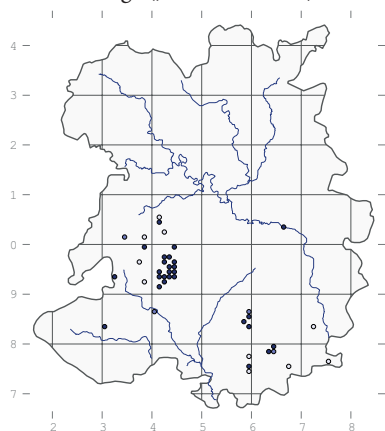
***Racomitrium aciculare***

(Hedw.) Brid.

**Yellow Fringe-moss**

First record (as *Dicranum aciculare*): Williams, c. 1800, 'rills in the Vessons Wood, on the east side of the Stiperstones.'

On rocks in flushes and by fast flowing streams, where it is often abundant. It is well known on the Long Mynd, where it was first recorded by Hamilton in 1887, by the Habberley Brook at Earl's Hill (R.D. Benson, 1893), Titterstone Cleve (A.W. Weyman, 1893). A lowland site for it is by the Sever at Benthall Edge (J.W. Bates, 1992).

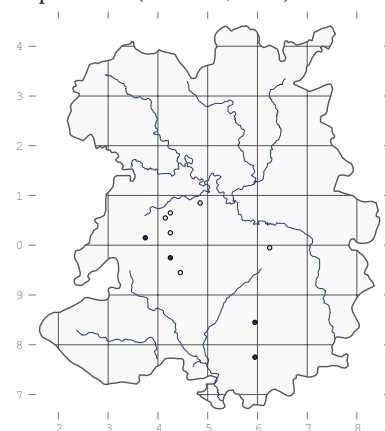
***Racomitrium aquaticum***

(Schräd.) Brid.

**Narrow-leaved Fringe-moss**

First record (as *Rhacomitrium protensum*): Hamilton, 1892, 'near Pleyley.'

Despite its name, this is far less aquatic than the previous species, favouring steep rock surfaces that are periodically flushed with water. It is recorded in scattered locations in the south of the county, including the Long Mynd (firstly by J.B. Duncan in 1906), Hoar Edge (M. Lawley, 2002) and the Stiperstones (L. Fraser, 2008).



*Sphagnum russowii* at Perkins Beach

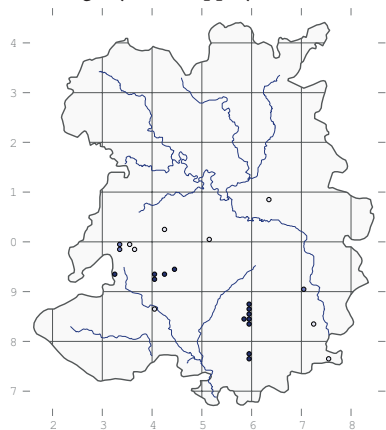
***Racomitrium fasciculare***

(Hedw.) Brid.

**Green Mountain Fringe-moss**

First record (as *Trichostomum fasciculare*): Williams, c. 1800, 'Frodesley Park and the Stiperstones.'

On exposed rock surfaces in upland sites. It is well known on Titterstone Clee (first recorded by J.B. Duncan in 1902), Brown Clee (Duncan, 1904) and the Long Mynd (J. Appleyard, 1979).



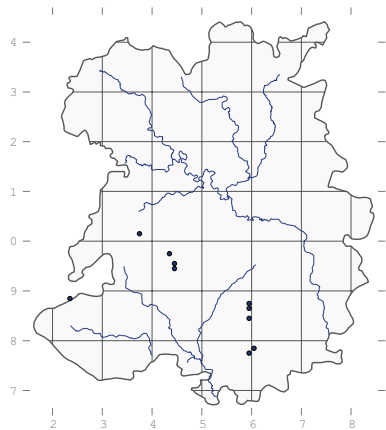
***Racomitrium sudeticum***

(Funck) Bruch & Schimp.

**Slender Fringe-moss**

First record: A.W. Weyman, 1893, Brown Clee (det. T.L. Blockeel, NMW).

A distinctly upland species, well known on Titterstone Clee (first found by J.B. Duncan in 1904, det. Blockeel, E, SHY), the Stiperstones (M.E. Newton, 1992), Long Mynd (Newton, 1994) and it has recently been reported from Maesgwyn (M. Lawley, 1999).



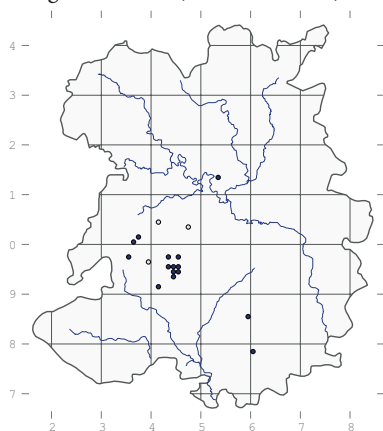
***Racomitrium affine*** (F. Weber & D. Mohr) Lindb.

**Lesser Fringe-moss**

First record: R.D. Benson, 1891, 'Church Stretton' [= Long Mynd] (conf. T.L. Blockeel, NMW).

On moist acid rocks, well known on the Long Mynd, where M.E. Newton (1994) has recorded it in

the Batch, Carding Mill Valley, Townbrook Hollow and elsewhere, on the Stiperstones (Newton, 1992), Brown Clee (M. Lawley, 1998), Titterstone Clee (J.D. Sleath, 1999) and Haughmond Hill (M.O. Hill, 2012).

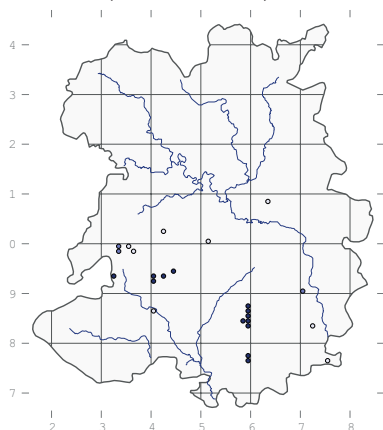


***Racomitrium heterostichum*** (Hedw.) Brid.

**Bristly Fringe-moss**

First record: R.D. Benson, 1892, Stapeley Hill (det. T.L. Blockeel, NMW).

As well as natural rocks, this species is also found on tiled roofs, dry stone walls and gravestones. Good places to look for it include Ashes Hollow (first recorded by W.H. Painter, 1897), Brown Clee (E.W. Jones, 1942) and Earl's Hill (Hamilton, 1905).

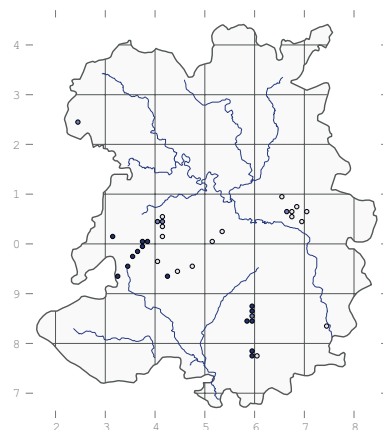


***Racomitrium lanuginosum*** (Hedw.) Brid.

**Woolly Fringe-moss**

First record (as *Trichostomum lanuginosum*): Williams, c. 1800, 'on walls and stones in Frodesley Park, Acton Burnell Hill, on the Stiperstones rocks, at the top of Caradoc hill.'

This big, bushy plant can be quite common on stony ground in the more upland areas on the Stiperstones range, Brown Clee (first recorded by A.W. Weyman, 1893) and Titterstone Clee (Hamilton, 1892). The cluster of records from the Telford area were made by W.H. Painter between 1899 and 1901.



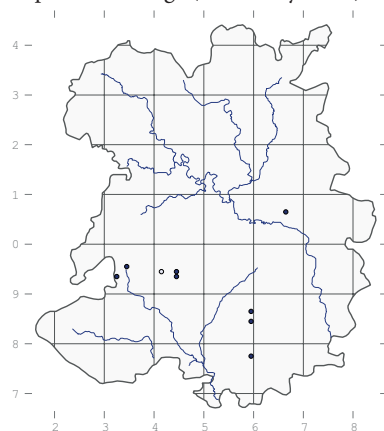
***Racomitrium ericoides***

(Brid.) Brid.

**Dense Fringe-moss**

First record: W.B. Boyd, 1890, 'Long Mynd, near Pole,' conf. M.O. Hill, NMW.

Unusually for the genus, this species grows on open, gravelly soil. Apart from the Long Mynd, it is known on Titterstone Clee (firstly by A.W. Weyman, 1892), Stoneyhill (M.O. Hill, 1992) and several places on the Stiperstones range (M. Lawley, 2002).



***Racomitrium elongatum***

Frisvoll

**Long Fringe-moss**

Just five sites: Moelydd (P.M. Benoit, 1978, conf. M.O. Hill), Rock of Woolbury (A.R. Perry, 1995), Titterstone Clee (N.G. Hodgetts, 1996-2007), Black Rhadley (M. Lawley, 2002) and the Long Mynd (Lawley, 2007).

***Racomitrium canescens***

(Hedw.) Brid.

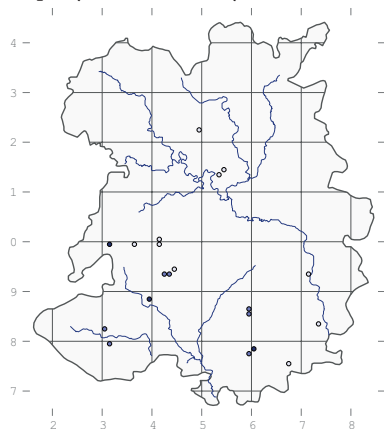
**Hoary Fringe-moss**

First record (as *Trichostomum canescens*): Williams, c. 1800, 'on rocks and stones slightly covered with earth – on Harmer hill, Haghmon hill, etc.'

On stony ground on most of the hills, including the Long Mynd (first recorded by R.D. Benson in 1893),



Titterstone Clee (Hamilton, 1893), Rock of Woolbury (J.B. Duncan, 1913), Brown Clee (Duncan, 1920) and Stapeley Hill (M. Lawley, 1998).

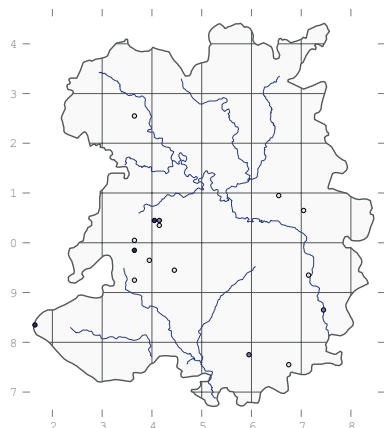


***Ptychomitrium polyphyllum*** (Sw.) Bruch & Schimp.

**Long-shanked Pincushion**

First record: R. Anslow, 1870, Steeraway.

This conspicuous plant is a robust cushion former, frequently fertile, on rocks and dry stone walls; it is of markedly northern and western distribution nationally. It is well known at Earl's Hill and the adjacent Oaks Wood (firstly by R.D. Benson, 1893) and sporadically recorded in other places such as Titterstone Clee (Anon., 1979), the Stiperstones (M.E. Newton, 1992) and Cefn Vron (M. Lawley, 1998).



***Blindia acuta*** (Hedw.) Bruch & Schimp.

**Sharp-leaved Blindia**

First record: J.B. Duncan, 1904, Titterstone Clee.

Still present on Titterstone Clee (M. Lawley, 2011), and also known on the Long Mynd (first recorded by Duncan in 1906) and Brown Clee (G. Bloom, 1979). It is more or less aquatic, growing on rocks or gravels in and around upland streams and flushes.

***Brachydontium trichodes*** (F. Weber) Milde

**Bristle-leaf**

Newly added to the county list: on a boulder by a stream on Brown Clee (SO585845, D.A. Callaghan, 2014).

***Seligeria pusilla*** (Hedw.)

Bruch & Schimp.

**Dwarf Rock-bristle**

Recorded in a couple of places on Brown Clee (SO595842, M. Lawley, 2010 and SO593849, D.A. Callaghan, 2014). J.B. Duncan's 1903 record was subsequently redetermined as *S. donniana*.

***Seligeria recurvata*** (Hedw.)

Bruch & Schimp.

**Recurved Rock-bristle**

First records (as *Grimmia pusilla*): Williams, c. 1800, 'rock on the Ponsert hill; in an old stone quarry on Cound Moor; by the side of a drain in a boggy meadow on the south side of Berrington.'

All of the species in this genus are minute and grow on rock, typically chalk and limestone. It has been recorded in the Wyre Forest, the Borle Brook, Highley (J.B. Duncan, 1906-1913) and Rock of Woolbury (M. Lawley, 1999).

***Seligeria donniana*** (Sm.)

Müll.Hal.

**Donn's Rock-bristle**

There are only five records for this species, at Bowhills Dingle (J.B. Duncan, 1903, 1904 and 1906 and M. Lawley, 2003) and Whithalls Wood (Lawley, 2002). Another tiny member of this genus, it is a little more difficult to identify as ripe capsules are needed for confirmation.

***Archidium alternifolium*** (Hedw.) Schimp.

**Clay Earth-moss**

First record: J.B. Duncan, 1906, Wyre Forest.

Also found at Titterstone Clee (firstly by J.B. Duncan, 1916) and Marton (M.J. Wigginton, 1979). It grows as rather untidy mats on disturbed acid ground such as tracks and quarries and occasionally on pond drawdown areas.

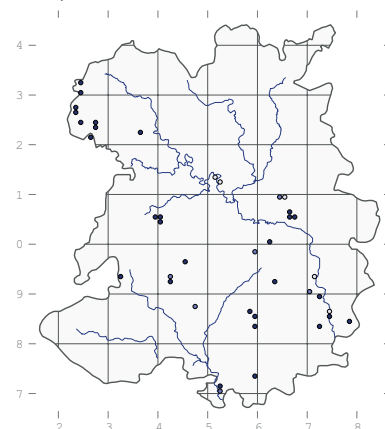
***Fissidens viridulus*** (Sw.)

Wahlenb.

**Green Pocket-moss**

First record: R. Anslow, c. 1865, The Ercall.

This very small species is quite common in Shropshire being found on slightly calcareous soils or occasionally on rock. It cannot really be distinguished from the following species without microscopical examination. It is recorded in many of the more base-rich sites, such as Coalbrookdale (N.G. Hodgetts, 1992), Llanymynech Rocks (J.L. Daniels, 1992) and the Novers (M. Lawley, 2006).



***Fissidens crispus*** Mont.

**Herzog's Pocket-moss**

First record (as *F. limbatulus*): E.F. Warburg, 1958, River Onny at Wistanstow.

Also recorded recently at Shadwell, Craig-Ilwyn and Pant quarries (all M. Lawley, 2006-'07). This minute plant cannot easily be separated from the previous species without microscopical examination.

***Fissidens pusillus*** (Wils.)

Milde

**Petty Pocket-moss**

First record: J.B. Duncan, 1902, Highley.

Another tiny moss that is generally overlooked. There are records for Hampton Loade (Duncan, 1906), the Borle Brook (Duncan, 1909), Sweeney Mountain (D.G. Long, 1975), Candy Valley (C.C. Townsend, 1992), Bringewood Chase (A.R. Perry, 1994) and Smethcott Hollow (M. Lawley, 2001).

***Fissidens gracilifolius*** Brugg-Nan. & Nyholm

**Narrow-leaved Pocket-moss**

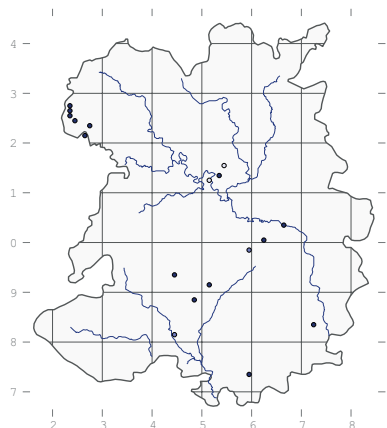
Just three locations: Wolverton Wood (G. Bloom, 1979), Whithalls Wood and Craig Syctyn (both M. Lawley, 2002).

***Fissidens incurvus*** Starke ex Röhl.

### Short-leaved Pocket-moss

First record: Hamilton, 1897, Highfields, Shrewsbury (SHY).

On calcareous to slightly acidic soils in woods, in places like Benthall Edge (N.G. Hodgetts, 1992), Llanymynech Rocks (J.L. Daniels, 1992) and the Long Mynd (M.E. Newton, 1994). It can only be satisfactorily identified in the field when fertile.



***Fissidens bryoides*** Hedw.

### Lesser Pocket-moss

First record (as *Dicranum bryoides*): Williams, c. 1800, 'ditch banks in a clayey soil, common.'

Widespread on circumneutral soils in woods and open places, avoiding permanently wet habitats. It can only be satisfactorily identified in the field when fertile. Good places to look for it include Ashes Hollow (first recorded there by J.G. Duckett in 1975), Benthall Edge (M.E. Newton, 1982), Earl's Hill (G.G. Graham, 1962) and Haughmond Hill (Hamilton, 1898).



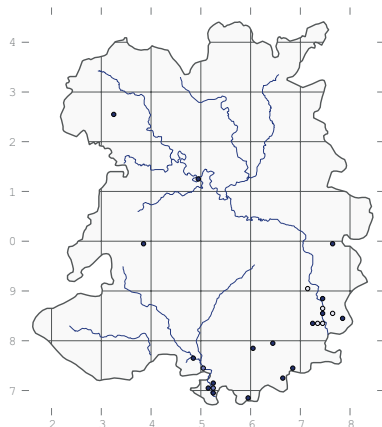
*Fissidens fontanus* (Martin Godfrey)

***Fissidens crassipes*** Wilson ex Bruch, & Schimp.

### Fatfoot Pocket-moss

First record: J.B. Duncan, 1901, River Severn at Hampton Loade.

On permanently or intermittently submerged rocks and stones in both still and flowing water. It has been recorded in several places along the Severn and by the Borle Brook (Duncan, 1909), River Rea (M. Lawley, 2001), Teme (N.T.H. Holmes, 1980) and by the Montgomery Canal (R.V. Lansdown, 1997).

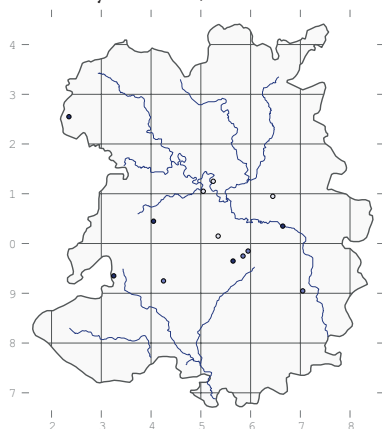


***Fissidens exilis*** Hedw.

### Slender Pocket-moss

First record: Williams, c. 1800, 'on Acton Burnell Hill.'

Another very small species of circumneutral soils in sheltered spots. There are recent records for places such as Benthall Edge (N.G. Hodgetts, 1992), Earl's Hill (E.J. Rumsey, 2004), Craig Sychtyn and Wenlock Edge (both M. Lawley, 2002-'03)



***Fissidens osmundoides*** Hedw.

### Purple-stalked Pocket-moss

First record: R.D. Benson, 1893, Lightspout Hollow.

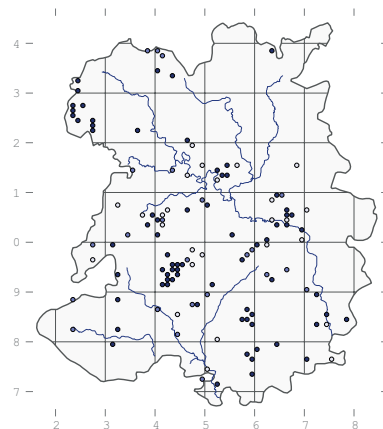
A species of northern and western distribution, on the edge of its range in

Shropshire. It is recorded only on the Long Mynd, where it has recently been recorded in Townbrook Hollow (M.E. Newton, 1994) and Gogbatch (S. Kingsbury, 1999).

***Fissidens taxifolius*** Hedw.

### Common Pocket-moss

First record (as *Dicranum taxifolium*): Williams, c. 1800, 'moist ditch-banks.'



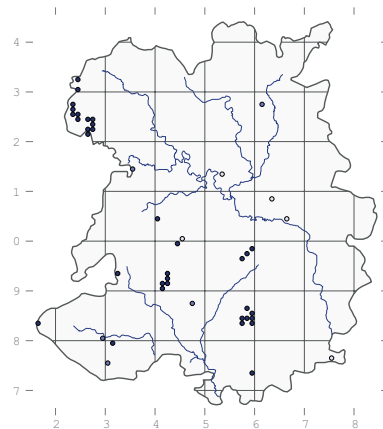
Widespread, growing just about everywhere there is some damp soil. It is the only member of the genus which it is easy to identify in the field when infertile. Places where it has often been recorded include Earl's Hill (firstly by F. Rose in 1960), Preston Montford (E.F. Warburg, 1957) and the Ercall (R. Anslow, 1865).

***Fissidens dubius*** P. Beauv.

### Rock Pocket-moss

First record (as *F. decipiens*): Hamilton, 1885, Haughmond Hill (SHY).

Common but largely confined to outcrops of limestone, where it can be found in profusion. It is rather similar to the following species and care needs to be taken in distinguishing them in the field. Good places to look for it include Wenlock Edge (first recorded by J.B. Duncan in 1913), Llanymynech Hill (Anon., 1977) and the Long Mynd (J.G. Duckett, 1974).



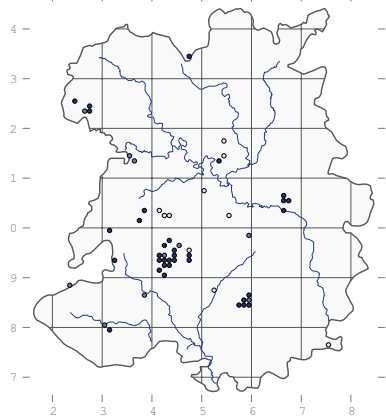
***Fissidens adianthoides***

(Hedw.)

**Maidenhair Pocket-moss**

First record (as *Dicranum adianthoides*): Williams, c. 1800, 'on Shomere Moss, Cound Moor and Aberly Wood.'

Similar to the previous species and perhaps a little more common. They share habitat requirements but this species is more often found in flushes than the former. It has been recorded in M10 *Carex dioica* on Hope Bowdler Hill (P. Eades, 2010); M23 *Juncus effusus* in Gogbatch and Boiling Well (both C.M. Owen, 1983), Lightspout Hollow (R. Tapper, 1983), and W8 *Fraxinus excelsior* scree at Blodwel Rock (Trueman, 1981).

***Fissidens fontanus* (Bach.Pyl.) Steud.****Fountain Pocket-moss**

First record (as *F. viridulus* var. *fontanus*): A.W. Weyman, 1893, 'Poughn Hill weir.'

Exclusively aquatic, growing submerged on rocks and stones. It can tolerate a certain amount of pollution and is frequently found in canals. There are old records of it along the Severn from Bewdley (J.B. Duncan, 1901) to Shrewsbury (Hamilton, 1904) and it has recently been found in the Llangollen Canal at Grindley Brook (SJ524430, R.J. Fisk, 1987, BBSUK).

***Pleuridium acuminatum***

(Lindb.)

**Taper-leaved Earth-moss**

First record: E.F. Warburg, 1957, Preston Montford.

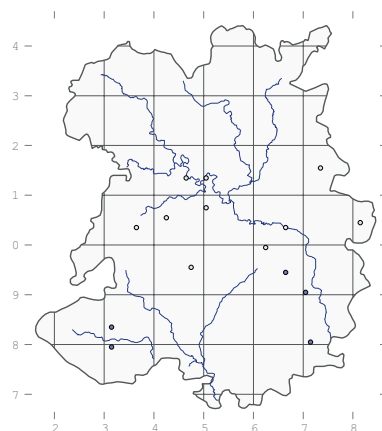
This and the following species, which is very similar, are weedy pioneers of bare soil and may even be found in plant pots. It is found in places like an arable field at Ford (J.D. Sleath, 2002), on Prees Heath (M.F. Godfrey, 2007) and in a garden at Bagbatch (D.H. Wrench, 2007).

***Pleuridium subulatum***

(Hedw.) Rabenh.

**Awl-leaved Earth-moss**

First record: R Anslow, 1870, Lilleshall.



Like the last species a weedy pioneer of bare soil and, given the rather few records, probably under-recorded.

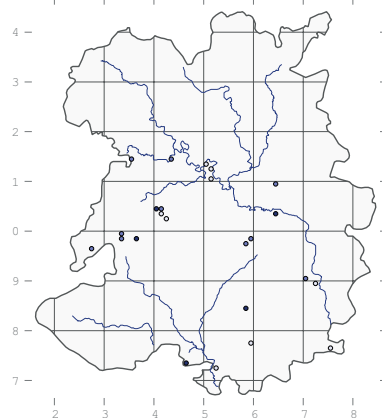
***Pseudephemerum nitidum***

(Hedw.) Löske

**Delicate Earth-moss**

First record: Hamilton, 1889, Underdale.

A tiny ephemeral pioneer species of newly open ground, which can be found in large sheets covering the drawdown mud at the sides of lakes and reservoirs. Away from such sites its small size can make it hard to detect. There are recent records for it on the Stiperstones (M.E. Newton, 1992), Bringewood Chase (A.R. Perry, 1994) and Tick Wood (Newton, 1994).

***Trichodon cylindricus***

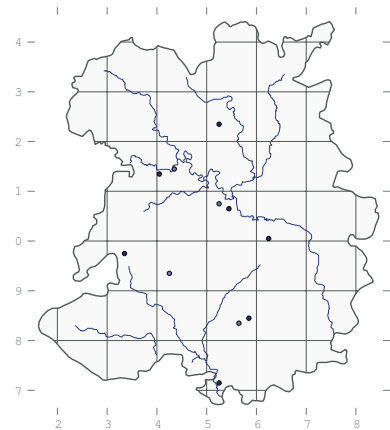
(Hedw.) Grout

**Cylindric Ditrichum**

First record (as *Ditrichum cylindricum*): E.F. Warburg, 1957, Preston Montford.

A common weed species of habitats such as stubble fields and quarries on acid soil. It is recorded in such places as Ashes Hollow (J.G. Duckett, 1974), Berrington Pool (M.J. Wigginton,

1979), an arable field at Ford (J.D. Sleath, 2002) and Shadwell Quarry (M. Lawley, 2006).

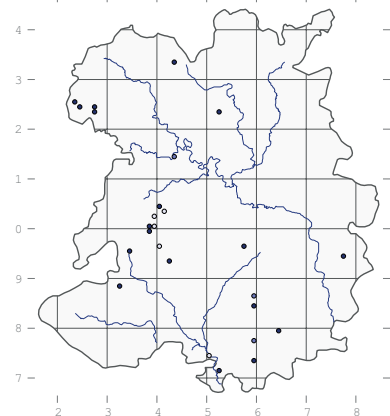
***Ditrichum heteromallum***

(Hedw.) E. Britton

**Curve-leaved Ditrichum**

First record (as *D. homomallum*): R.D. Benson, 1893, Broom Hill.

Widespread on disturbed mineral soil, but rarely recorded. It is well known on the Stiperstones range (firstly by Benson, 1893), Long Mynd (Benson, 1893), Brown Clee (J.B. Duncan, 1920) and the limestone in the north-west (firstly by M. Lawley at Craig Sychtyn, 2002).



*Pogonatum aloides* (Martin Godfrey)



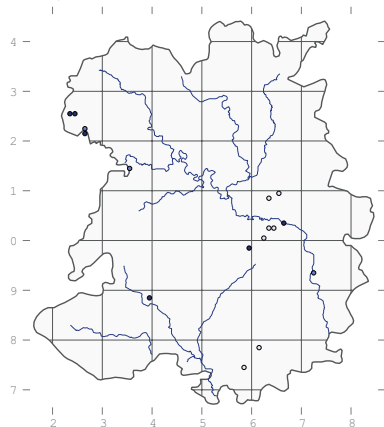
***Ditrichum flexicaule***

(Schwägr.) Hampe

**Bendy Ditrichum**

First record: J. Fraser, 1867, The Wrekin.

Typical of upland calcareous grassland. There are recent records of it on Benthall Edge (J.W. Bates, 1992), Llanymynech Rocks, Wenlock Edge (A.R. Perry, 1995), the Long Mynd (M. Lawley, 1996), Craig Sychtyn (S. Kingsbury, 1996) and Moelydd (R. Green, 2002).



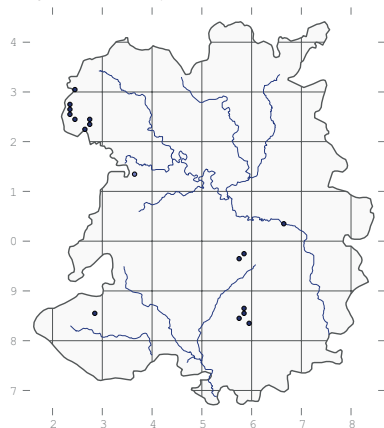
***Ditrichum gracile*** (Mitt.)

Kuntze

**Slender Ditrichum**

First record: N.G. Hodgetts, 1984, Loton Park.

A large and distinctive moss which is occasionally mistaken for the previous species, with which it shares similar habitat requirements. Many of its sites are quarries, as at Benthall Edge (Hodgetts, 1992), Llanymynech Hill (M.E. Newton, 1997) and Wenlock Edge (M. Lawley, 2006).



***Ceratodon purpureus***

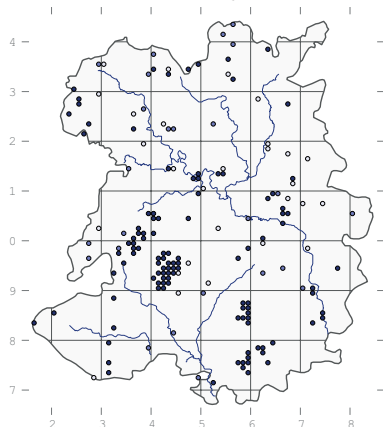
(Hedw.) Brid.

**Redshank**

First record: Williams, c. 1800, 'on the wall of Acton Burnell Cold Bath.'

Possibly the commonest and most cosmopolitan British moss, found in town and country and sufficiently 'anonymous' when not in fruit to give

endless problems to beginners. It occurs on a wide range of acidic, disturbed substrates and is often abundant on paths and bonfire sites. On Earl's Hill (A.K. Thorne, 2002) and Haughmond Hill (M.F. Godfrey, 2006) it is recorded in U1 *Rumex acetosella* grassland.



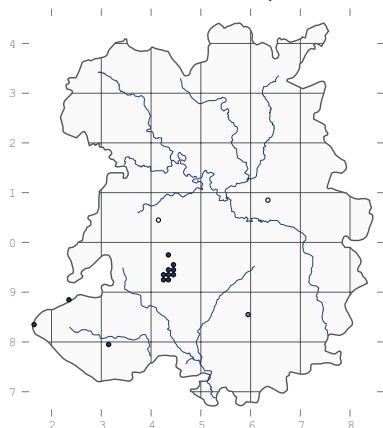
***Amphidium mougeotii***

(Schimp.) Schimp.

**Mougeot's Yoke-moss**

First record: R. Anslow, 1870, The Wrekin.

Forming conspicuous, vivid green cushions on crags, rock faces and ravines at moderate altitudes. It is well known on the Long Mynd (first recorded by Hamilton in 1893) and has recently been recorded at the Rock of Woolbury (A.R. Perry, 1995), Maesgwyn (M. Lawley, 1999) and Cefn Vron (Lawley, 2001).



***Rhabdoweisia fugax*** (Hedw.)

Bruch & Schimp.

**Dwarf Streak-moss**

Just two records: at the Devil's Chair (R.D. Benson, 1892, SHY) and Light Spout (E.M. Benson, 1893).

***Rhabdoweisia crispata***

(Dicks.) Lindb.

**Toothed Streak-moss**

Recorded on Titterstone Clee by J.B. Duncan in 1904 and M. Lawley in 2000, and recently found on the Wrekin (Lawley, 2004).

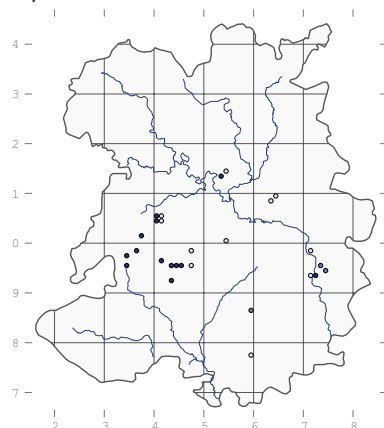
***Cynodontium bruntonii***

(Sm.) Bruch & Schimp.

**Brunton's Dog-tooth**

First record: Williams, c. 1800, Langley.

On sheltered dry, acidic rock crevices in places like Earl's Hill (first recorded by R.D. Benson in 1893), Haughmond Hill (Hamilton, 1893), the Stiperstones (M.E. Newton, 1992) and the Long Mynd (Newton, 1994).



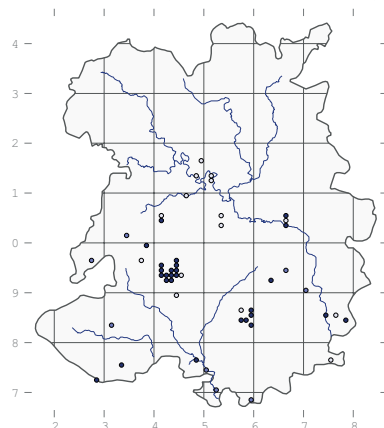
***Dichodontium pellucidum***

(Hedw.) Schimp.

**Transparent Fork-moss**

First record (as *Dicranum pellucidum*): Williams, c. 1800, 'by the side of Eaton and Pitchford brooks.'

On rocks or gravel by water, either still or flowing, typically in M35 *Montia fontana* on the Long Mynd (D.A. Callaghan, 2012). It can also be found, in a somewhat atypical form, on base-rich upland rocks. Good places to look for it include Ashes Hollow (first recorded by G.G. Graham in 1961), by the Habberley Brook at Earl's Hill (R.D. Benson, 1892) and along the Teme around Ludlow (N.T.H. Holmes, 1980).



***Dichodontium flavescens***

(Dicks.) Lindb.

**Yellowish Fork-moss**

First record: R.D. Benson, 1893, Lyd Hole.

Very similar to the above species, and, given that in the absence of ripe

capsules they can only be distinguished microscopically, its occurrence in the county could be seen as problematic. It has been recorded on the Long Mynd (Hamilton, 1893 – W.G. Travis, 1909), Caughley and Cox Wood (W.H. Painter, 1902-04), by the Alum, Mor and Borle brooks (J.B. Duncan, 1905-09, E, NMW) and at Smethcott (Hamilton, 1905, SHY).

### *Dichodontium palustre*

(Dicks.) M. Stech

#### Marsh Forklet-moss

First records (as *Dicranella squarrosa*): R.D. Benson & Hamilton, 1893, Cothercott Hill, the Long Mynd, the Stiperstones, Titterstone Clee and Wilderley Hill.

Typically a flush species with most records centred around the Long Mynd or Clee Hills areas. A typical habitat being M35 *Montia fontana* in Lightspout Hollow (R. Tapper, 1983), Jonathan's Hollow and Long Batch (both D.A. Callaghan, 2012) and M36 *Chrysosplenium oppositifolium* springs in Ashes Hollow (Callaghan, 2012).

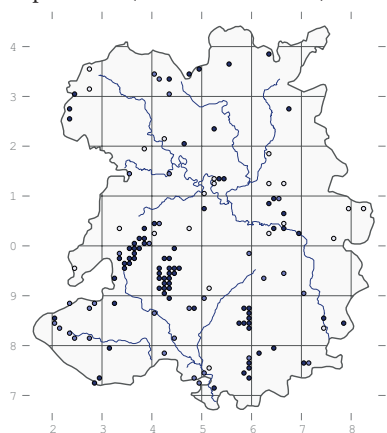
### *Dicranoweisia cirrata*

(Hedw.) Lindb.

#### Common Pincushion

First record (as *Weissia cirrata*): R.D. Benson, 1893, 'wall top, Walford [House, Dorrington].'

Typically an epiphyte on or dead wood, but also found on rock and stone. R.D. Porley (1986) described it as characteristic on trunks and branches in the ash wood on Earl's Hill and in Oaks Wood, and 'abundant on the scree, occasional on the cliff face, and frequent as an epiphyte in the hawthorn scrub.' It is often recorded on Benthall Edge (firstly by W.H. Painter, 1903), at Cole Mere (Sinkers, 1963) and on the Stiperstones (M.E. Newton, 1992).

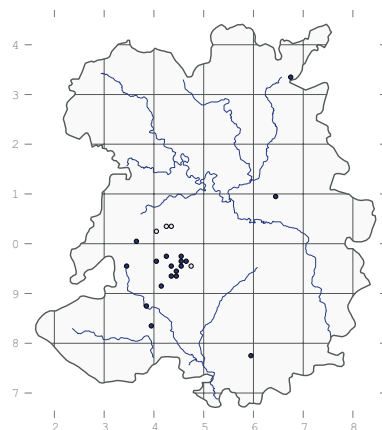


### *Schistostega pennata* (Hedw.)

F. Weber & D. Mohr

#### Luminous Moss

First record (as *Schizostega osmundacea*): R.D. Benson, 1891, 'the cave in Dingle Hollow, Pulverbatch.'



In rabbit burrows on sandy soil or on rock in deep shade where its persistent protonema can be seen shining golden green in the gloom. It is well known on the Long Mynd (where it was first recorded by M.E. Newton in 1994), Titterstone Clee (J.B. Duncan, 1902) and the Stiperstones (A.R. Perry, 1997). Lowland sites are seemingly less common, but it is known on the sandstone at the Wildlife Trust's Walkmill Marsh reserve near Market Drayton (SJ671333, 2000).

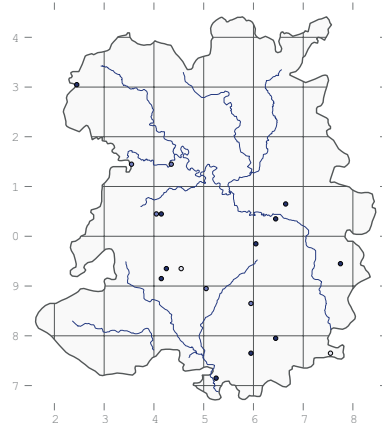
### *Dicranella schreberiana*

(Hedw.) Dixon

#### Schreber's Forklet-moss

First record: Hamilton, 1893, Church Stretton.

On disturbed slightly acid to base-rich soils such as stubble fields and ditches. There are recent records of it in places such as the Long Mynd and woods in the Ironbridge Gorge (both M.E. Newton, 1994), Wenlock Edge (A.R. Perry, 1995), Titterstone Clee (D.H. Wrench, 2004) and Cynynion Quarry (M. Lawley, 2006). On Earl's Hill it is rare on anthills in a wet meadow (R.D. Porley, 1986).



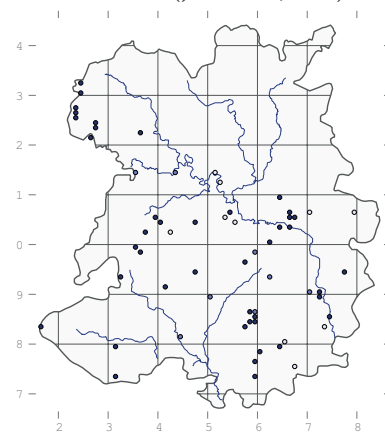
### *Dicranella varia* (Hedw.)

Schimp.

#### Variable Forklet-moss

First record (as *Dicranum varium*): Williams, c. 1800, 'ditch banks about Eaton; pastures about Cound.'

In open, moist, base-rich habitats. Recently recorded in most of the sites in the Shropshire Council quarries survey, such as Craig-Ilwyn, Eardington, Lilleshall, and the Novers (all M. Lawley, 2006), and otherwise known in places like Benthall Edge (N.G. Hodgetts, 1992), Tankerville Hollow (M.E. Newton, 1992), Titterstone Clee (J.D. Sleath, 1999).



### *Dicranella staphylina* H.

Whitehouse

#### Field Forklet-moss

First record: J.G. Duckett, 1974, Ashes Hollow.

On bare ground in arable fields and elsewhere. Recorded in M22 *Juncus subnodulosus* on the margin of Crose Mere (M.J. Wigginton, 1979), at Shavington Park (R.J. Fisk, 1985), Benthall Edge (J.W. Bates, 1992), Grinshill Hill (M. Lawley, 2002), an arable field at Ford (J.D. Sleath, 2002), High Meadow Farm, Hilton Sand Pit and Old Farm Quarry, Stapleton (all Lawley, 2002-07). It is a pioneer species of bare ground which disappears quite quickly as vegetation succession moves on.

### *Dicranella rufescens* (Dicks.)

Schimp.

#### Rufous Forklet-moss

First record: R.D. Benson, 1891, Pulverbatch.

A pioneer species of acidic wet habitats, such as exposed mud by ponds. It is well known on the Long Mynd (first recorded there by J.G. Duckett in 1974), Titterstone Clee (N.G. Hodgetts, 1996) and Rock of Woolbury (A.R. Perry, 1995).

***Dicranella cerviculata***

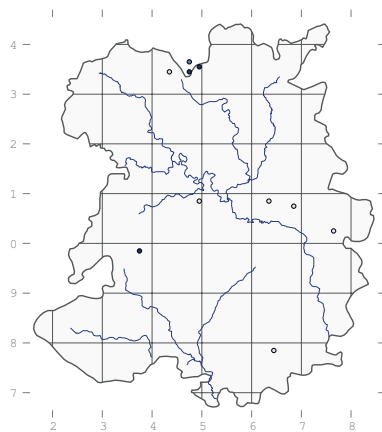
(Hedw.) Schimp.

**Red-neck Forklet-moss**

First record: R. Anslow, 1870, The Wrekin.

On bare peat and other damp acidic substrates. It has been recorded at Bomere Pool (Hamilton, 1886), Catherton Common (J.B. Duncan, 1902), Clarepool Moss (Hamilton, 1900), Dawley (Hamilton, 1901), Rytton (W.H. Painter, 1906), Wem Moss (N.G. Hodgetts, 1984 – M.A. Bodley, 1999) and Whixall Moss (R.D. Benson, 1893 – M.E. Newton, 1997).

Its recent discovery on the Stiperstones at Gatten Plantation (M.E. Newton, 1992) suggests that it could turn up in more upland sites, as it has almost gone from the lowlands.



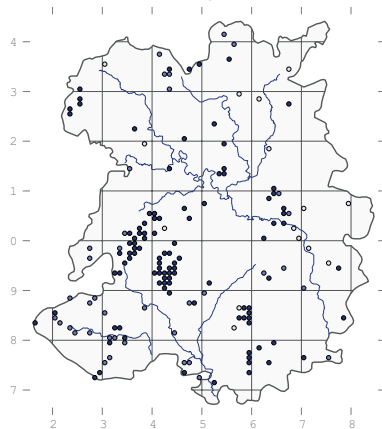
***Dicranella heteromalla***

(Hedw.) Schimp.

**Silky Forklet-moss**

First record (as *Dicranum heteromallum*): Williams, c. 1800, 'ditch banks.'

Common throughout the county on a variety of acidic substrates, including woodland banks, well rotted tree stumps and peat exposures on moorland. A good place to see it is Oaks Wood, where it occurs in W17 *Leucobryum glaucum* woodland (A.J. Barker, 2004) and R.D. Porley (1986) described it as 'abundant on the floor, frequent on tree bases and occasional on the conglomerate outcrop.'



***Dicranum polysetum* Sw.**

**Rugose Fork-moss**

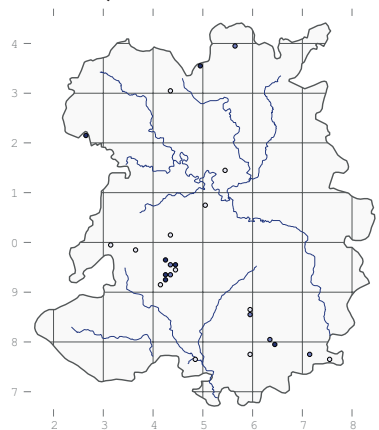
Just two known sites: Clarepool Moss, where it was recorded by F. Rose in 1959 and Sinkin in 1961, and on a grassy bank by a conifer plantation on Haughmond Hill (M.F. Godfrey, 2006, conf. M.O. Hill). It is typical of conifer plantations and birch-dominated heath.

***Dicranum bonjeanii* De Not.**

**Crisped Fork-moss**

First record: Hamilton, 1892, Stapeley Hill.

In wet grassland and mires. It is well known on the Long Mynd, where it was first recorded by R.D. Benson in 1893, Whixall Moss (G.G. Graham, 1960) and Cramer Gutter (M. Lawley, 1998). A record for Llanymynech Rocks is by J.L. Daniels in 1992.



***Dicranum leioneuron* Kindb.**

**Fuzzy Fork-moss**

Amongst *Sphagnum* hummocks on Whixall Moss, SJ483356, found independently by J.L. Denyer and M.F. Godfrey on the same day, 12/11/2011, conf. T.L. Blockeel.

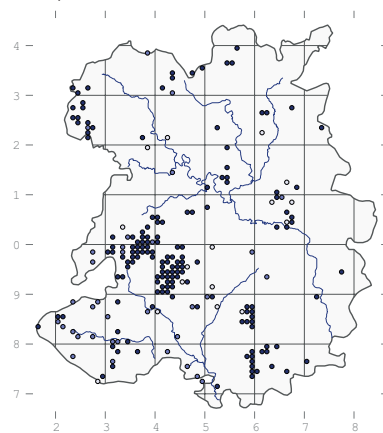
***Dicranum scoparium* Hedw.**

**Broom Fork-moss**

First record: Williams, c. 1800, 'woods and ditch banks, common.'

In a wide variety of habitats, most typically on the ground in grassland, heath and acid woodland but it will also grow, for example, on rocks and rotting wood. It has been recorded in CG2 *Avenula pubescens* at Jones's Rough; H8 *Ulex gallii* at Cramer Gutter; H9 *Deschampsia flexuosa* at Knolls on the Long Mynd and on the Stiperstones; H12 *Vaccinium myrtillus* in various places on the Long Mynd (C.M. Owen, 1983), the Stiperstones and at Rhos Fiddle; M6 *Carex echinata* in Catbatch (D.A. Callaghan, 2012);

M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* in Colliersford Gutter (R. Tapper, 1983) and Gogbatch (Owen, 1983); and M25 *Molinia caerulea* at Steel Heath. It is also frequent in U1 *Rumex acetosella* on Earl's Hill, Haughmond Hill, Prees Heath and elsewhere; U5 *Nardus stricta* on Titterstone Clee (A.K. Thorne, 1999); in W4 *Betula pubescens* at Lin Can Moss; W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981); W16 *Quercus petraea* on the Ercall; and Q17 *Q. petraea* at Oaks Wood (A.J. Barker, 2004).

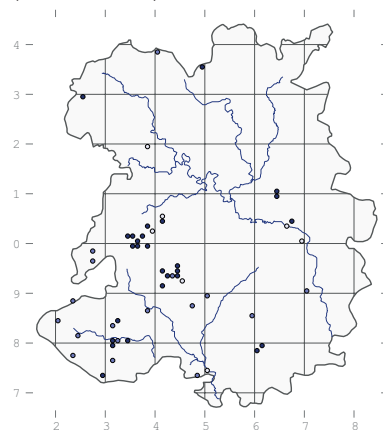


***Dicranum majus* Sm.**

**Greater Fork-moss**

First record: R. Anslow, c. 1865, 'Arkoll.'

A characteristic plant of W17 *Leucobryum glaucum* woodland, as at Oaks Wood (A.J. Barker, 2004), but also in W16 *Q. petraea* in places like Sowdley Wood and the Ercall and even in W10 *Q. robur* in some places in Hope Valley. Elsewhere it occurs in heathland in places like Carding Mill Valley (J. Appleyard, 1979) and Perkins Beach (M.E. Newton, 1992). It has also once been recorded on Whixall Moss (Newton, 1993).





***Dicranum undulatum***

Schröd. ex Brid.

**Waved Fork-moss**

First record: Sinker, 1959, Whixall Moss.

Long known on Whixall Moss, but the old records do not specify which side of the border, and until recently it was only known for certain on the Welsh side. However, in 2005 F.J. Rumsey located a patch clearly (but only just) within v.c. 40, at SJ48323558 and it has since been recorded at SJ487358 (M.O. Hill, 2007). It also used to be at Clarepool Moss (P.W. Richards, 1960 – W.S. Lacey, 1982). The habitat has not been recorded but is surely M18 *Sphagnum papillosum* raised mire.

***Dicranum fuscescens* Sm.****Dusky Fork-moss**

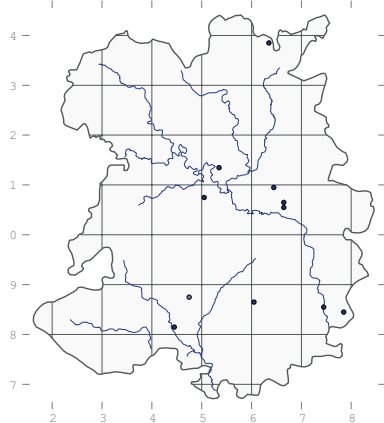
First record: R.D. Benson, 1893, the Stiperstones.

A variable plant which, in some forms, might be mistaken for the very common *D. scoparium* especially as it shares some of the habitats of this – in particular boulders, rock and tree bases. It is well known on the Stiperstones range and has been recorded in Carding Mill Valley (J.B. Duncan, 1906), Earl's Hill (W.P. Hamilton, 1893 – Anon, 1977) and on Titterstone Clee (Duncan, 1909).

***Dicranum tauricum* Sappajin****Fragile Fork-moss**

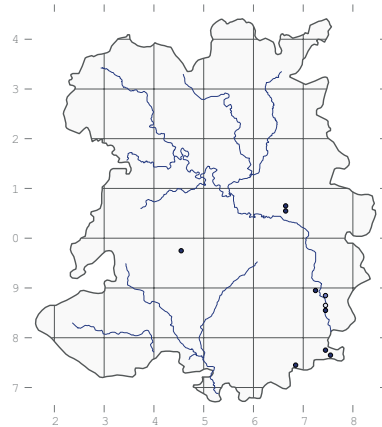
First record: G. Bloom, 1979, 'old wooded quarries below Wenlock Edge.'

Abundant in the neighbouring Staffordshire and known to be pollution-tolerant, often making it the only epiphyte in some areas. It grows in cushions on both living and dead wood. In Shropshire it is less common and mostly recorded in woods, such as Lydebrook Dingle (M.E. Newton, 1994), Nortoncamp Wood (A.R. Perry, 1995), Shomere Pool (D.H. Wrench, 2003) and Haughmond Hill (M.F. Godfrey, 2006).

***Dicranum montanum* Hedw.****Mountain Fork-moss**

First record: J.B. Duncan, 1906, Alum Brook at Hampton Load (SHY).

Forming cushions on living trees and, less frequently, on rocks. It has a superficial similarity to *Dicranoweissia cirrata*. It is recorded in places like the Wyre Forest (Duncan, 1916), Lydebrook Dingle (M.E. Newton, 1994), Gogbatch (R.F. Shoubridge, 1999), Whithalls Wood and Eardington Plant Quarry (M. Lawley, 2002-'06).

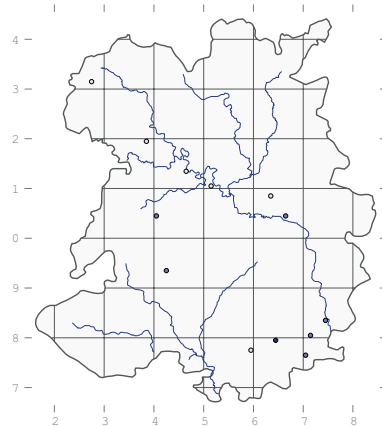
***Campylopus fragilis* (Brid.)**

Bruch &amp; Schimp.

**Brittle Swan-neck Moss**

First record: Hamilton, 1889, The Wrekin (SHY).

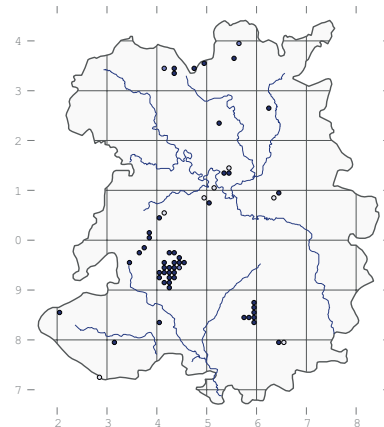
There are remarkably few records for this species which, nationally, is not uncommon. It is a bit more tolerant of base-rich conditions than other members of the genus and is usually found in well drained grass or heathland. It has been recorded in places like Shelton Rough (Hamilton, 1893), Titterstone Clee (A.W. Weyman, 1893), Brogyntyn Park (E.B. Benson, 1901), the Wyre Forest (J.B. Duncan, 1912) and the Long Mynd (J.G. Duckett, 1967). The only recent localised record is from Cramer Gutter (M. Lawley, 1998).

***Campylopus pyriformis***

(Schultz) Brid.

**Dwarf Swan-neck Moss**First record (as *Dicranum flexuosum* var.  $\beta$ ): Williams, c. 1800, Shomere Pool.

A common species found growing throughout the county, most usually on disturbed acidic substrates. It is one of the early colonisers of burnt ground.

***Campylopus flexuosus***

(Hedw.) Brid.

**Rusty Swan-neck Moss**

First records: Hamilton: Lyd Hole and Lord's Hill; R.D. Benson: Radlith and Vessons (all 1893).

On bogs and peaty woodlands in the lowlands, such as Brown Moss (E.F. Warburg, 1957), Cole Mere (firstly by

*Campylopus introflexus*  
(Martin Godfrey)*Dicranum majus*

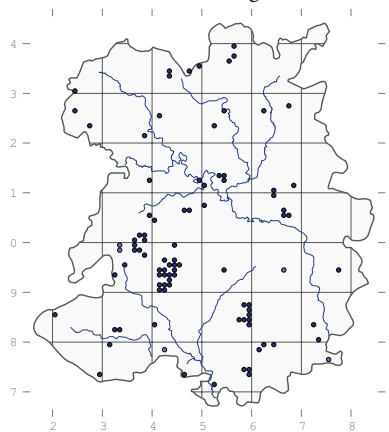
Hamilton, 1903), Puleston Common, Wem Moss (F. Rose, 1959) and Whixall Moss (M.E. Newton, 1993); and in upland sites with acid soils, such as Titterstone Cleve (first by J.B. Duncan, 1904), Cramer Gutter (Duncan, 1906) and the Long Mynd (G.G. Graham, 1961).

## *Campylopus introflexus* (Hedw.) Brid.

### Heath Star Moss

First record: S.W. Greene, 1959, Wyre Forest.

An introduced species, probably from the southern hemisphere. It was first recorded in Britain in 1941 and can now be found throughout the country. It is a pioneer species of bare, acid substrates such as peat. It is recorded in H8 *Ulex gallii* on Prees Heath; M16 *Sphagnum compactum* on Hodnet Heath (M.F. Godfrey, 2011); and U1 *Rumex acetosella* on Lyth Hill and Prees Heath. Good places to see it include Cramer Gutter (first recorded there by M.J. Wigginton, 1981), the Stiperstones (M.E. Newton, 1992) and Whixall Moss (N.G. Hodgetts, 1992).



## *Leucobryum glaucum* (Hedw.) Ångstr.

### Large White-moss

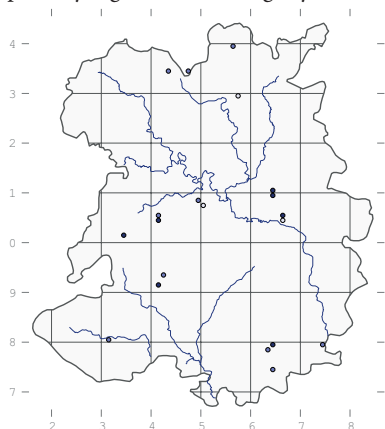
First record: Williams, c. 1800, 'opposite the rock on Ponsett Hill'

In upland woods, typically W16 *Quercus petraea* in places such as The Ercall, Oaks Wood and Sowdley Wood (R.D. Porley, 1984) and in the few stands of W17 *Leucobryum glaucum* in the county, such as Oaks Wood. It is also found in some upland flushes, as at Ashes Hollow (J.G. Duckett, 1974), Minton Batch (M.E. Newton, 1994) and Catherton Common.

In the lowlands, it is rare on some of the mosses, presumably relics of M18 *Sphagnum papillosum*, at Bomere Pool

(last seen by A.D. Skelding, 1951), Brown Moss (E.F. Warburg, 1957), Clarepool Moss (N.G. Hodgetts, 1984), Shomere Moss (Hamilton, 1893) and Wem Moss (Sinker, 1962).

The best place to see it is at Oaks Wood, where there were until recently huge mounds, a metre or more across and high, that must have been decades or even centuries old. There has been a considerable decline, especially in the lowlands, as a consequence of drainage and afforestation. It has been recorded up to about 230 m on The Ercall and possibly higher on the Long Mynd.

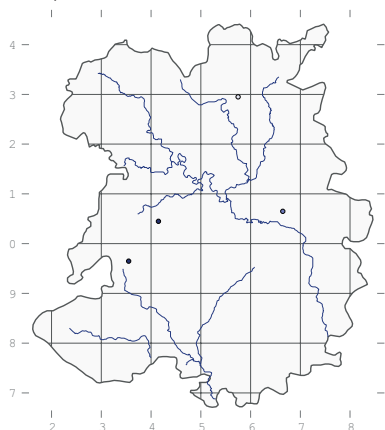


## *Leucobryum juniperoideum* (Brid.) Müll. Hal.

### Smaller White-moss

First record (as *Leucobryum albidum*): E.B. Benson, 1892, 'on the sandstone at Hawkstone Park.'

Typical of acid woodland such as W17 *Leucobryum glaucum* at Oaks Wood (D. Martin, 2005) and also reported from Lydebrook Dingle (M.E. Newton, 1984) and the Stiperstones (M. Lawley, 2001).

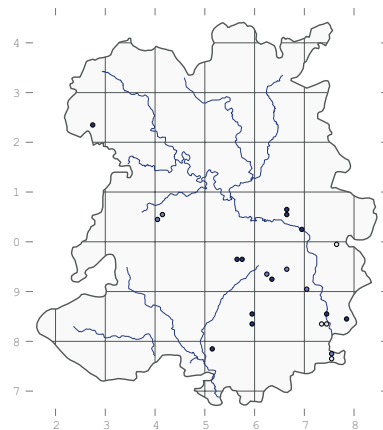


## *Eucladium verticillatum* (With.) Bruch & Schimp.

### Whorled Tufa-moss

First record (as *Weissia verticillata*): A.W. Weyman, 1891, Hope Gutter.

In shady places where lime-rich water seeps over rock, this species is one of the classic bryophyte tufa-formers. It still occurs at The Hope (refound by D.H. Wrench, 1995) and is known in places like Crickheath Hill (M. Lawley, 2007), Hudwick Dingle (Lawley, 2003), Lydebrook Dingle (M.E. Newton, 1994) and Withybed Wood (M.C. Clark, 1959).

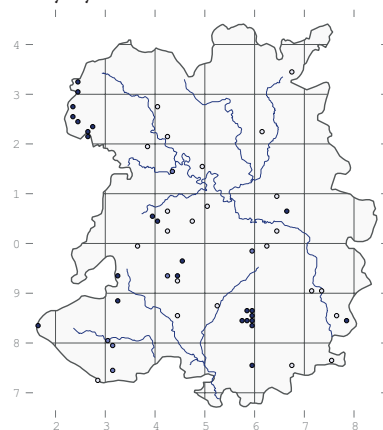


## *Weissia controversa* Hedw.

### Green-tufted Stubble-moss

First record (as *Grimmia controversa*): Williams, c. 1800, 'ditch banks, common'.

A common species of basic soil which cannot be adequately identified and separated from *W. brachycarpa* in the absence of ripe capsules. It is well known on Earl's Hill, where it is 'rare, on paths and in hawthorn scrub' (R.D. Porley, 1986) and on the limestone in the north-west, where it was first recorded on the British Bryological Society field meeting in 1977, on Llanymynech Hill.



## *Weissia rutilans* (Hedw.) Lindb.

### Pointed-leaved Stubble-moss

This species again cannot be identified in the absence of ripe capsules. It can be confused with *W. controversa*, with which it shares similar open soil habitats. It has been recorded in a clay pit near New House, Pulverbatch (R.D.

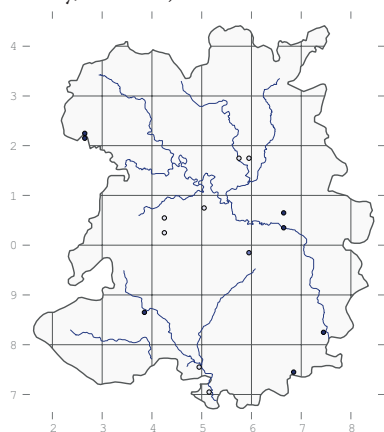
Benson, 1892, SHY), in the vicinity of Bridgnorth (M.E. Newton, 1971), on Benthall Edge (R. Green, 2000) and at Dolgoch Quarry (M. Lawley, 2002).

***Weissia brachycarpa*** (Nees & Hornsch.) Jur.

### Small-mouthed Beardless-moss

First record: R. Anslow, 1870, High Ercall.

Another species that needs ripe capsules for identification. It is found on bare ground, as in a field adjoining Shomere Moss (Hamilton, 1893) and in old quarries on Wenlock Edge (M.F.V. Corley, 1979). There are recent records of it on Benthall Edge (N.G. Hodgetts, 1992), at Stoneyhill (M.O. Hill, 1992), Llanymynech Rocks (J.L. Daniels, 1992), Plowden Woods, Mawley Hall and Stanley (the last three by M. Lawley, 2000-'02).



***Weissia longifolia*** Mitt.

### Crisp Beardless-moss

First record: R. Anslow, 1870, Osbaston.

On bare calcareous soil; recorded at Stapleton (R.D. Benson 1895), Wenlock Edge (M.F.V. Corley, 1979), Llynclys Quarry (M. Lawley, 2004) and Eardington Plant Quarry (M. Lawley, 2006).

***Tortella tortuosa*** (Hedw.)

Limpr.

### Frizzled crisp-moss

First record (as *Trichostomum tortuosum*): Hamilton, 1890, Church Stretton (SHY).

A pronounced calcicole, usually found growing as large bushy cushions on exposed limestone but it may also grow in calcareous grassland. It occurs in CG2 *Avenula pubescens* at Jones's Rough and Llanymynech Rocks and in W8 *Fraxinus excelsior* woodland at Blodwel Rock (Trueman, 1981). Away from the limestone in the north-west it is recorded on the Long Mynd (firstly by J.B. Duncan, 1906), Wenlock Edge

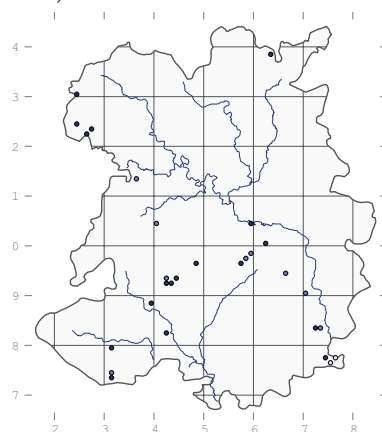
(Duncan, 1913), Rock of Woolbury (Duncan, 1913), the Novers (M. Lawley, 2006) and Earl's Hill.

***Trichostomum brachydontium*** Bruch

### Variable Crisp-moss

First record (as *T. mutabile* var. *littorale*): J.B. Duncan, 1900, Wyre Forest.

In base-rich habitats where it grows on bare soil or on soil-filled cracks in rocks. It is well known on the Long Mynd (first by J.B. Duncan in 1906), Wenlock Edge (Duncan, 1913), Rock of Woolbury (Duncan, 1913) and Llanymynech Hill (M.E. Newton, 1997). During the recent quarries survey it was also found at several new sites, including Cynynion, Lilleshall and Shadwell quarries (all M. Lawley, 2006).

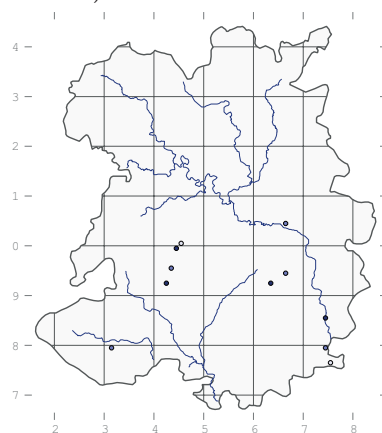


***Trichostomum tenuirostre*** (Hook. & Taylor) Lindb.

### Narrow-fruited Crisp-moss

First record: Hamilton, 1891, 'Nightshell, Smethcott' (SHY).

On damp acidic substrates, chiefly rock. There are recent records of it in Callow Hollow (M.E. Newton, 1994), Smethcott Hollow, Whithalls Wood and Hudwick Dingle (all M. Lawley, 2001-'03).



***Pleurochaete squarrosa*** (Brid.) Lindb.

### Side-fruited Crisp-moss

Just two sites: Llanymynech Hill, where it was first recorded by J.G. Duckett in 1974, but only localised on the Shropshire side of the border, by M.E. Newton in 1997, and Jones's Rough (M. Lawley, 2003). It is restricted to base-rich habitats.

***Hymenostylium recurvirostrum*** (Hedw.) Dixon

### Hook-beak Tufa-moss

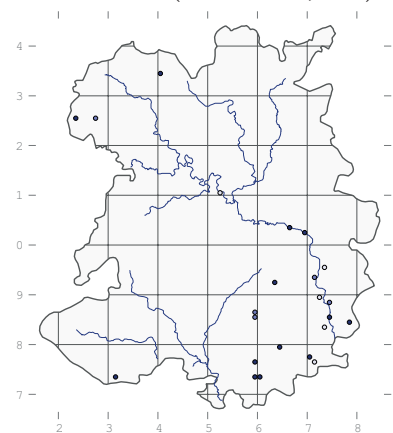
A plant of base-rich habitats, on the eastern edge of its range in Shropshire. Its only known site is Alberbury Quarry at Loton Park (SJ562139), where it was first recorded by M.E. Newton in 1980.

***Gyroweisia tenuis*** (Hedw.) Schimp.

### Slender Stubble-moss

First record (as *Weissia tenuis*): Hamilton, 1889, Emstrey Rough (SHY).

Shade-tolerant, usually growing on damp, base rich substrates such as brickwork, rock or mortar. There are recent records of it in places like the bank of the Llangollen Canal at Ellesmere (C.C. Townsend, 1992), Benthall Edge (N.G. Hodgetts, 1992), Hudwick Dingle (M. Lawley, 2003) and Titterstone Clee (D.H. Wrench, 2004).



***Gymnostomum aeruginosum*** Sm.

### Verdigris Tufa-moss

There are just two good records of this species, at Callow Hollow (J.B. Duncan, 1910) and on Brown Clee (G. Bloom, 1979). It is a rather small plant of rocks and crevices kept moist by base rich water seepage, or of wet mortar on old walls.



***Ephemerum recurvifolium***  
(Dicks.) Boul.

**Strap-leaved Earth-moss**

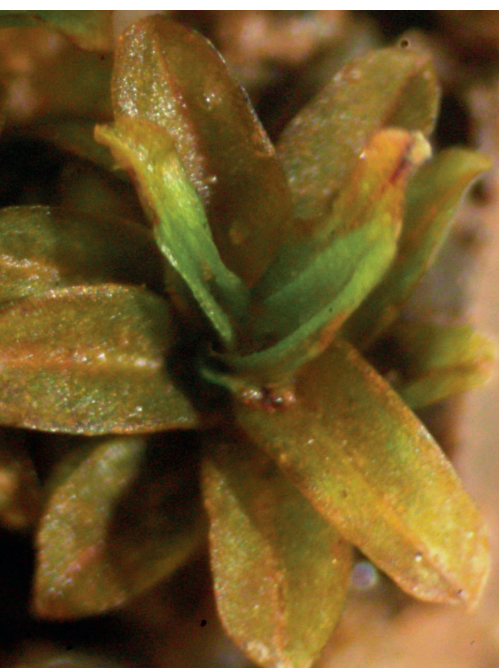
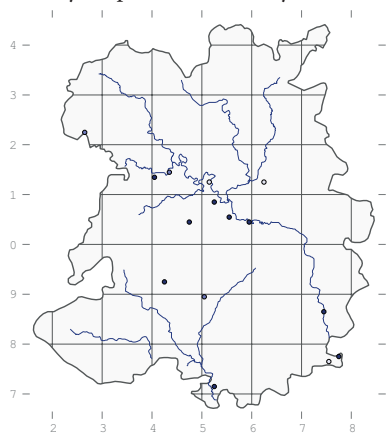
Recently discovered in a quarry on Wenlock Edge (SO608999, M. Lawley & J.D. Sleath, 2000, BBSUK) and subsequently found in several other quarries, such as Dolgoch, Lilleshall, Eardington and Shadwell (all Lawley, 2002-'06). It grows on bare calcareous soils and has a rather southern and eastern distribution in Britain.

***Ephemerum serratum***  
(Hedw.) Hampe

**Serrated Earth-moss**

First record: R. Anslow, 1870, Wrockwardine.

A small plant of bare soil on tracks and arable fields, recorded in places like Callow Hollow (M.E. Newton, 1994), arable fields at Ford and Lower Betton (both J.D. Sleath, 2002) and Old Farm Quarry, Stapleton (M. Lawley, 2007).



*Tortula amplexa* (Martin Godfrey)

***Dialytrichia mucronata***  
(Brid.) Broth.

**Pointed Lattice-moss**

First record (as *Cinclidotus brebissoni*): J.B. Duncan, 1906, Mor Brook at Eardington (SHY).

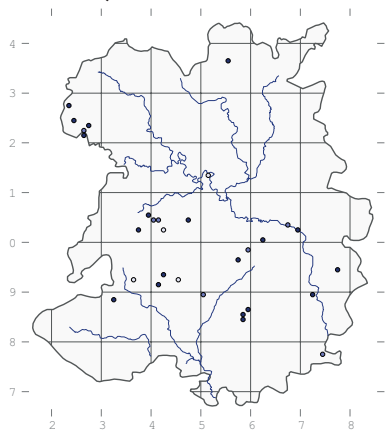
On trees and rocks in the flood zone of rivers; it will also grow away from running water on stones and walls. Unusually, this is a species of more southern distribution and is towards the northern edge of its range in Shropshire. It has been recorded by the Mor Brook at Ash Bridge (BBS, 1979), the River Rea at Neen Sollars (M. Lawley, 2001), and the Teme at Ashford Bowdler (Lawley, 2002).

***Pseudocrossidium hornschurchianum*** (Schultz)  
R.H. Zander

**Hornschurch's Beard-moss**

First record (as *Barbula Hornschuchii*): Hamilton, 1893, Monkmoor Coppice.

On bare calcareous substrates, commonly found on compacted soil by paths but occasionally on walls. It is recorded in places such as 'cindery ground by a track' in Longdon Orchard, Wyre Forest (R.E. Longton, 1961, BIRM), old quarries on Wenlock Edge (M.F.V. Corley, 1979) and Prees Heath (M.F. Godfrey, 2007). It was also found in numerous sites during the Shropshire Council quarries survey (M. Lawley, 2006-'07).



***Pseudocrossidium revolutum*** (Brid.) R.H. Zander

**Revolvate Beard-moss**

First record (as *Barbula revoluta*): Hamilton, 1899, Worfield (SHY).

It is a plant of limestone and mortar, commonly found on buildings and in quarries. It has been recorded on Wenlock Edge (M.F.V. Corley, 1979), Ludlow Castle (M. Fletcher, 1979), Crowsnest Dingle (M.E. Newton, 1992) and Newcastle Church (M. Lawley, 1998).

***Bryoerythrophyllum ferruginascens*** (Stirt.) Giacom.

**Rufous Beard-moss**

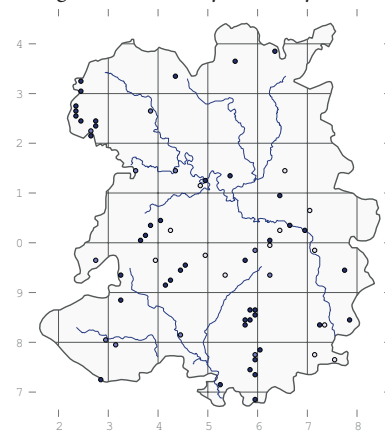
In Ashes Hollow (SO437927, D.A. Callaghan, 2013).

***Bryoerythrophyllum recurvirostrum*** (Hedw.) P.C. Chen.

**Red Beard-moss**

First record (as *Barbula rubella*): Hamilton, 1887, 'walls, St Mary's Water Lane, Shrewsbury' (SHY).

A common species of stony, calcareous habitats, walls and crevices. On Earl's Hill (R.D. Porley, 1986) and Haughmond Hill (M.F. Godfrey, 2006) it occurs in U1 *Rumex acetosella* grassland. Elsewhere it is found in many quarries, such as Dolgoch (M. Lawley, 2002) and Titterstone Clee (D.H. Wrench, 2004) and even on tufa forming on the walls of the English Bridge in Shrewsbury (Godfrey, 2010).



***Leptodontium flexifolium***  
(Dicks.) Hampe

**Bent-leaved Beard-moss**

First record (as *Didymodon flexifolium*): Hamilton, 1893, Grinshill.

On well-drained acid substrates, usually organic but occasionally rocky. It is known on the Long Mynd (first recorded by J.B. Duncan in 1906), the Stiperstones (M.E. Newton, 1992), Titterstone Clee (M. Lawley, 1997) and Haughmond Hill (N.G. Hodgetts, 2006).

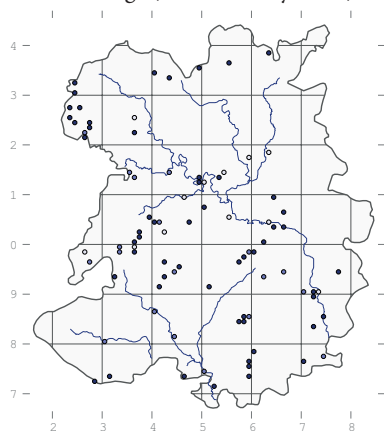
***Barbula convoluta*** Hedw.

**Lesser Bird's-claw Beard-moss**

First record (as *Tortula convoluta*): Williams, c. 1800, 'Cound church yard wall.'

A common and abundant weedy species of bare ground, recorded in OV2 *Sagina procumbens* community on walls in Shrewsbury (M.F. Godfrey,

2011) and in U1 *Rumex acetosella* on the scree at Earl's Hill (R.D. Porley, 1986). It is also well known on limestone exposures on Llanymynech Rocks (J.L. Daniels, 1992) and along Wenlock Edge (M.F.V. Corley, 1979).

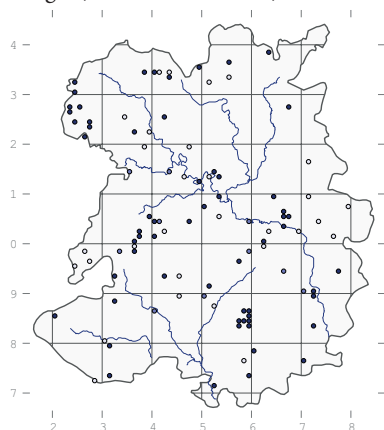


### ***Barbula unguiculata* Hedw.**

#### **Bird's-claw Beard-moss**

First record (as *Tortula unguiculata*): Williams, c. 1800, 'ditch-banks, common' and (as *T. unguiculata* var. *apiculata*) 'walls about Eaton'.

On bare ground and rocks, in places like an arable field at Atcham (J.D. Sleath, 2002), a canal bank near Ellesmere (C.C. Townsend, 1992), old quarries on Wenlock Edge (M.F.V. Corley, 1979) and mine spoil in Mytton Dingle (M.E. Newton, 1992).



### ***Didymodon acutus* (Brid.)**

K. Saito

#### **Pointed Beard-moss**

Recently reported by M. Lawley from Llynclys Quarry (det. S.D.S. Bosanquet, 2004), Loton Park and Lilleshall Quarry (both 2006).

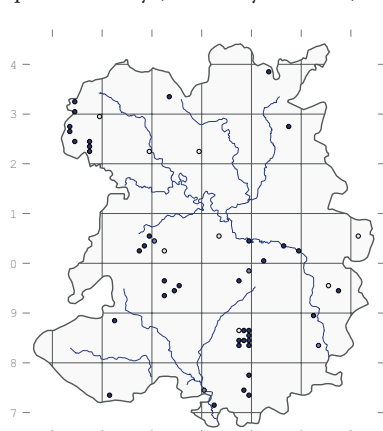
### ***Didymodon rigidulus* Hedw.**

#### **Rigid Beard-moss**

First record (as *Tortula imberbis*): Williams, c. 1800, 'pastures and clover fields about Eaton [Mascott]'

Common, especially on the hills. It is well known at Benthall Edge (firstly by

W.H. Painter, 1906), Brown Clee (R.D. Benson, 1899), Wenlock Edge (J.B. Duncan, 1913) and the Long Mynd (M.E. Newton, 1994), and it was recently found in many places during the quarries survey (M. Lawley, 2006-'07).



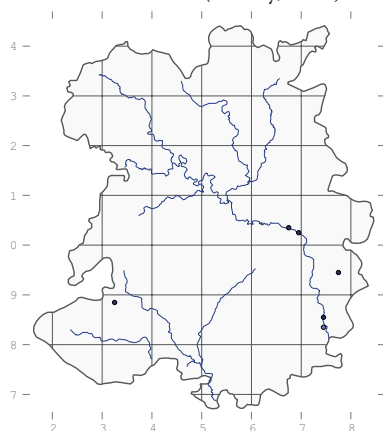
### ***Didymodon nicholsonii***

#### **Culm.**

#### **Nicholson's Beard-moss**

First record: J.B. Duncan, 1912, 'by the Severn, Highley'.

With unusual habitat requirements, occurring naturally on hard substrates in the flood-zone of rivers and streams, but also growing as a weedy species on man-made substrates like tarmac and old walls. It is recorded by the Severn at Benthall Edge (N.G. Hodgetts, 1992), Coalport (BBS, 1992) and Whithalls Wood (M. Lawley, 2002), at Bishops Castle church (Lawley, 2001) and Hilton Sand Pit (Lawley, 2006).



### ***Didymodon umbrosus* (Müll.**

Hal.) R.H. Zander

#### **Shady Beard-moss**

Recorded only at Leaton Church (SJ496183, MJM Yeo, 1988, conf. T.L. Blockeel, BBSUK). A very small plant of moist, shaded, calcareous substrates with south-easterly distribution in Britain.

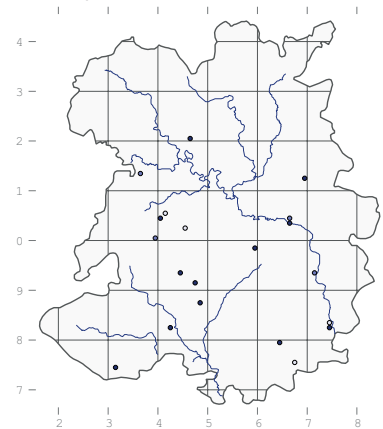
### ***Didymodon vinealis* (Brid.)**

R.H. Zander

#### **Soft-tufted Beard-moss**

First record: R.D. Benson, 1893, Lyd Hole.

In scattered localities such as Benthall Edge (J.W. Bates, 1992), Townbrook Hollow (M.E. Newton, 1994), Harton Hollow (A.R. Perry, 1995), Stowe (R.F. Shoubridge, 1998), Catherton Common (M. Lawley, 1998) and Merrington Green (R. Green, 2001).



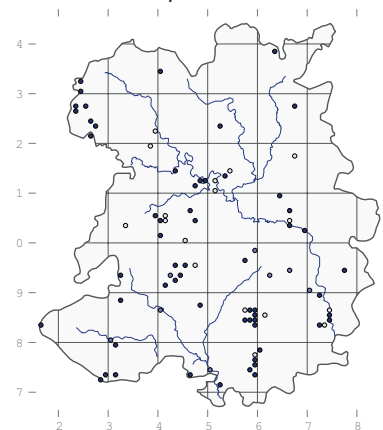
### ***Didymodon insulanus* (De**

Not.) M.O. Hill

#### **Cylindric Beard-moss**

First record (as *Barbula cylindrica*): R.D. Benson, 1893, 'near Lyd Hole' (conf. J.E. Bagnall).

The long, curved brownish leaves make this common and abundant moss easy to identify in the field. It occurs throughout the county on soil, walls, concrete, tarmac and similar artificial substrates as well as more natural substrates like tree bases and wooden posts. On Earl's Hill it is 'occasional on scree in the ash woodland, on the banks of the Habberley Brook and rare on the ash woodland floor' (R.D. Porley, 1986). There are recent records of it in W8 *Fraxinus excelsior* woodland by the Borle Brook, in the Quarry, Shrewsbury and on walls in the town (all M.F. Godfrey, 2010).

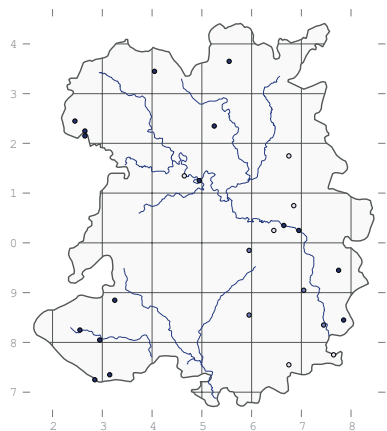


***Didymodon luridus*** Hornsch.  
ex Spreng.

**Dusky Beard-moss**

First record: Hamilton, 1893, Shelton Rough.

Typical of moist, base-rich substrates in both natural and man-made habitats. It is often recorded along the Severn, as at Highley (J.B. Duncan, 1912) and the English Bridge, Shrewsbury (M.F. Godfrey, 2010) or in limestone quarries such as Llanymynech Rocks (J.L. Daniels, 1992).

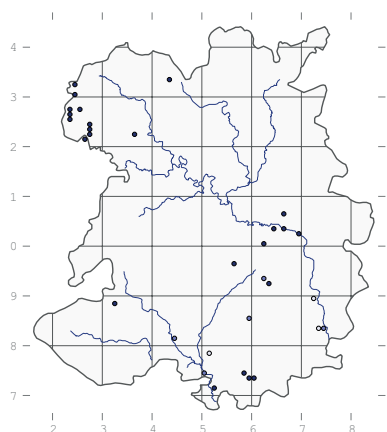


***Didymodon sinuosus*** (Mitt.)  
Delogne

**Wavy Beard-moss**

First record (as *Barbula sinuosa*): A.W. Weyman, 1892, Hope Gutter (SHY).

This small but fairly easily identified plant was until recently known only on base-rich rocks by rivers, mainly in the lower Severn valley, e.g. by the Mor Brook at Upton Forge (J.B. Duncan, 1906) and Ludlow Castle (M. Fletcher, 1979). It has been increasingly turning up in quarries since it was first recorded at Llanymynech Rocks by J.L. Daniels in 1992, and it was found in many sites during the recent Shropshire Council quarries survey (M. Lawley, 2006-'07). Generally lowland, but up to 318 m at Carreg-y-big Quarry (SJ248323, Lawley, 2007).

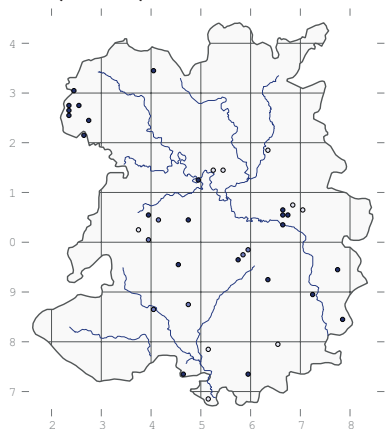


***Didymodon tophaceus***  
(Brid.) Lisa

**Olive Beard-moss**

First record (as *Barbula tophaceum*): Hamilton, 1889, Haughmond Hill (SHY).

A tufa-forming moss found on wet base-rich rocks in natural habitats in places like Hope Gutter (A.W. Weyman, 1893), Cramer Gutter (J.B. Duncan, 1906) and Hudwick Dingle (M. Lawley, 2003) or in artificial situations such as the Llangollen Canal at Ellesmere (C.C. Townsend, 1992) or the walls of the English Bridge, Shrewsbury (M.F. Godfrey, 2011). It also turned up in several quarries during the recent survey (Lawley, 2006-'07).

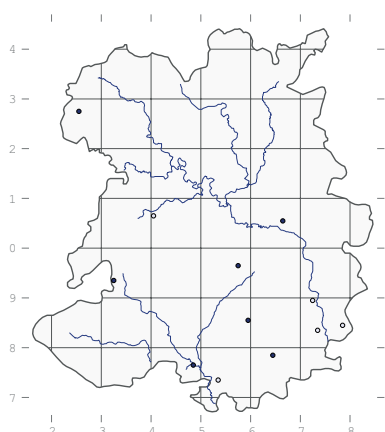


***Didymodon spadiceus***  
(Mitt.) Limpr.

**Brown Beard-moss**

First record (as *Barbula spadicea*): A.W. Weyman, 1892, 'near Poughn Hill, Ludlow' (SHY).

Typically on rocks by fast-flowing rivers and streams, as in Bowhills Dingle (J.B. Duncan, 1905), the Mor and Borle brooks (Duncan, 1906-'09), Candy Valley (C.C. Townsend, 1992), the River Teme at Bromfield (M. Lawley, 1999) and Loamhole Dingle (Lawley, det. G.P. Rothero, 2003, BBSUK). It has also been recorded recently in Lilleshall and More quarries (Lawley, 2006-'07).

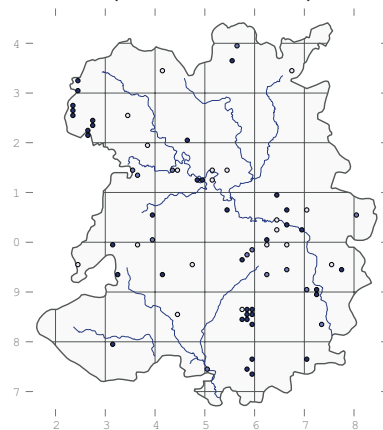


***Didymodon fallax*** (Hedw.)  
Zander

**Fallacious Beard-moss**

First record (as *Barbula fallax*): Hamilton, 1885, 'ditch banks near Highfields, Shrewsbury' (SHY).

By far the most common member of the genus, growing typically as a weedy species on bare soil and disturbed ground. Although seen on rock it only ever actually grows on a soil covering and not the rock itself. It is recorded in numerous quarries, including Titterstone (D.H. Wrench, 2004) and Lilleshall (M. Lawley, 2006), and on bare ground in places like Prees Heath and on the banks of the Severn in Shrewsbury (both M.F. Godfrey, 2010).



***Didymodon tomaculosus***  
(Blockeel) M.F.V. Corley

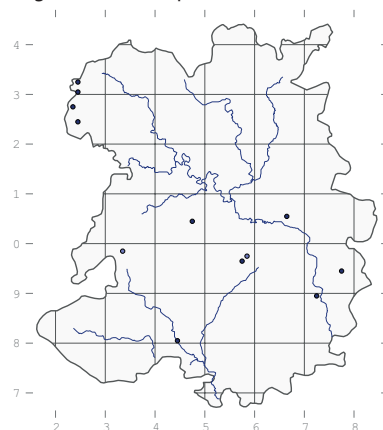
**Sausage Beard-moss**

This nationally scarce species has a single site, at Atcham (SJ537092), where it was found in 2002 by D.T. Holyoak and a team from the British Bryological Society during an arable fields survey. It is a tiny plant of heavy disturbed ground and may be easily overlooked.

***Didymodon ferrugineus***  
(Schimp. ex Besch.) M.O. Hill

**Rusty Beard-moss**

First record: J.B. Duncan, 1913, Wenlock Edge, near Presthope.





In many of the quarries surveyed during the recent survey (M. Lawley, 2006-'07) and also recorded at Grit Hill (M.E. Newton, 1979) and Rotting Wood, Jones's Rough and Loamhole Dingle (all Lawley, 1998-2003).

***Pterygoneurum ovatum*** (Hedw.) Dix.

**Oval-leaved Pottia**

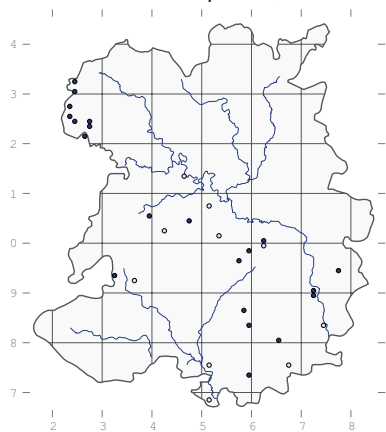
Recorded only at Leighton (c. 1950, Anon., E) and Loton Park (SJ357137, M. Lawley, det. G.P. Rothero), this is a plant of thin soil over base-rich substrates.

***Aloina aloides*** (Schultz) Kindb.  
**Common Aloe-moss**

First records (as *Tortula rigida*): Williams, c. 1800, 'in a fir plantation above Mr Calcot's House at Betton near Berrington; on Acton Burnell Hill'.

In thin grassland on calcareous soils, typically in old quarries. It is only possible to give an unambiguous identification of this species in the presence of capsules.

All recent records have been from quarries, such as 'old quarries on Wenlock Edge' (M.F.V. Corley, 1979), Llanymynech Rocks (J.L. Daniels, 1992), Eardington, Shadwell and the Novers (all M. Lawley, 2006).

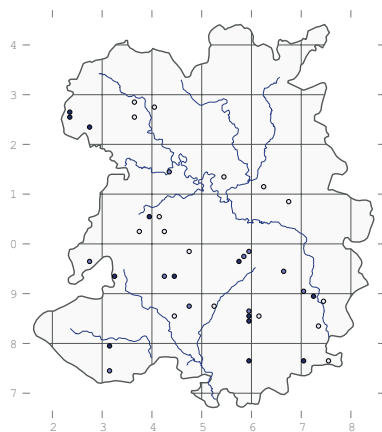


***Tortula subulata*** Hedw.

**Awl-leaved Screw-moss**

First record: Williams, c. 1800, 'sandy ditch banks and roots of trees.'

On well drained neutral to base-rich soil and rock, including around the roots of trees in flood zones and on walls. There are recent records for places like Townbrook Hollow (M.E. Newton, 1994), Rock of Woolbury (A.R. Perry, 1995), the Wyre Forest (R.F. Shoubridge, 1998), Craig Sychtyn (M. Lawley, 2002) and Titterstone Clee (D.H. Wrench, 2004). It has also turned up in several sites during the recent quarries survey (Lawley, 2006-'07).

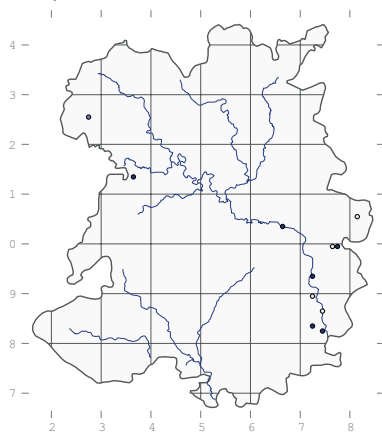


***Tortula marginata*** (Bruch & Schimp.) Spruce

**Bordered Screw-moss**

First record: Hamilton, 1897, Humphreston Hall.

In sheltered places in the lower Severn valley such as the Mor Brook, Hampton Loade (both J.B. Duncan, 1906), Badger Dingle (Duncan, 1909 – M. Lawley, 2002) and the Borle Brook (Lawley, 2002). The two isolated dots in the west are from Sweeney Mountain (D.G. Long, 1975) and Alberbury (BBS, 1992).



***Tortula muralis*** Hedw.

**Wall Screw-moss**

First record: Williams, c. 1800, 'walls and roofs of buildings, common.'

Very common in towns, where it typically grows in OV20 *Sagina procumbens* on walls and pavements, as on walls by the Severn in Shrewsbury (M.F. Godfrey, 2011). It is also found – and more frequently recorded – on natural rock exposures, as at Earl's Hill, where it is 'frequent on the cliff face and scree slope' (R.D. Porley, 1986).

***Tortula amplexa*** (Lesq.)

Steere

**Clay Screw-moss**

In just one location, at Eardington Plant Quarry (SO724899, M. Lawley, conf. S.D.S. Bosanquet, 2006). Possibly introduced from North America.

***Tortula lanceola*** R.H. Zander

**Lance-leaved Pottia**

First record (as *Grimmia lanceolata*): Williams, c. 1800, 'by the side of the road over Hagmon Hill'.

On bare soil, usually in limestone areas. It has been recorded at Steeraway (R. Anslow, 1870), Lightmoor (W.H. Painter, 1897), in various places along Wenlock Edge (firstly by Painter, 1899) and Llanymynech Rocks (J.L. Daniels, 1992).

***Tortula wilsonii*** (Hook.) R.H. Zander

**Wilson's Pottia**

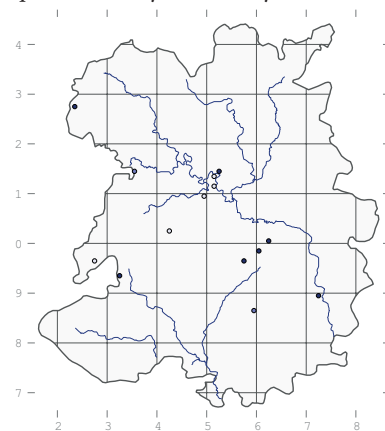
Collected by R.D. Benson in Pulverbatch in 1892 (SHY). Benson made no comment about where he found it and it seems likely that it was in his garden, where it may have been accidentally introduced, as it is a coastal plant.

***Tortula modica*** R.H. Zander

**Blunt-fruited Pottia**

First record: Hamilton, 1887, 'fallow field by Sharpstones' (SHY).

A small, ephemeral weedy plant which grows on the disturbed soils of fields and the floors of quarries. It has been recorded on Brown Clee (J.B. Duncan, 1920), at Alberbury (M.E. Newton, 1980), by the Severn at Uffington (BBS, 1992) and on Wenlock Edge (A.R. Perry, 1995). It was also found in a number of sites during the recent quarries survey (M. Lawley, 2006-'07).

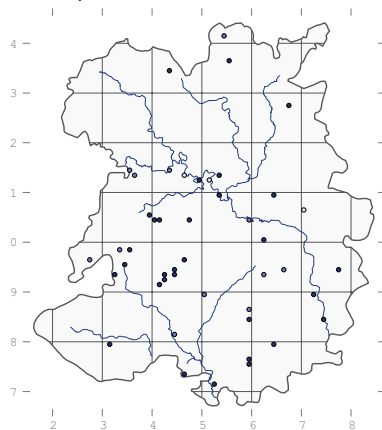


***Tortula truncata*** (Hedw.) Mitt.

**Common Pottia**

First record (as *Gymnostomum truncatum*): Williams, c. 1800, 'ditch banks and pastures'.

An ephemeral of open, disturbed, bare soil, such as stubble fields, and may best be thought of as an arable weed. On Earl's Hill it is 'frequent on bare tops of anthills in the wet meadow, on paths, and occasional in hill grassland on the east [side]' (R.D. Porley, 1986). It has also been recorded in an arable field at Atcham (J.D. Sleath, 2002) on Prees Heath and by the Severn at the English Bridge, Shrewsbury (both M.F. Godfrey, 2007-2010).



***Tortula protobryoides*** R.H. Zander

**Tall Pottia**

First record: Leighton, 1841, Red Barn, Shrewsbury.

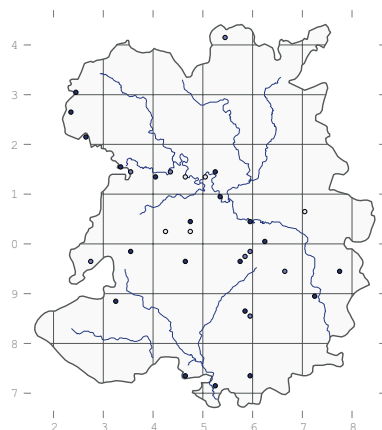
A casual of disturbed ground in quarries etc., recorded recently on a tarmac path at Diddlebury Church (M. Lawley, 2004), a quarry at Fishmore, a pile of gravel at Chelmarsh reservoir and at Loton Park (all Lawley, 2006). It is also well known at Llanymynech Rocks but there are no records localised to the Shropshire side of the border. There is also one old record for the Ercall (R. Anslow, c. 1865).

***Phascum cuspidatum*** (Hedw.)

**Cuspidate Earth-moss**

First record (as *P. subulatum*): Williams, c. 1800, 'ditch banks'.

A common ephemeral weed of disturbed soil such as arable fields at Ford and Atcham (both J.D. Sleath, 2002), in quarries such as Llanymynech Rocks (J.L. Daniels, 1992) and Shadwell (M. Lawley, 2006), and by rivers such as the Severn at Shelton Rough (W.P. Hamilton, 1905) and Crew Green (M.E. Newton, 1997).



***Microbryum starckeanum*** (Hedw.) R.H. Zander

**Stark's Pottia**

First record: M.O. Hill, 1975, Snailbeach mines.

On disturbed lime-rich soils and metallic mine spoil. It is well known on Llanymynech Hill but not yet on the Shropshire side of the border. There are also recent records of it in quarries at Oreton (R.F. Shoubridge, 1998) and Fishmore (M. Lawley, 2006) and at Jones's Rough (Lawley, 2003).

***Microbryum davallianum*** (Sm.) R.H. Zander

**Smallest Pottia**

First record (as *Pottia minutula*): R.D. Benson, 1892, Pulverbatch (*Pottia starckeanum* ssp. *conica*, det. D.F. Chamberlain, E).

There are recent records for this in quarries at Alberbury (M.E. Newton, 1989), Wenlock Edge (A.R. Perry, 1995), Eardington and Shadwell (both M. Lawley, 2006) and older ones for what could have been fields at Hucksbarn (A.W. Weyman, 1893), Sharpstones (W.P. Hamilton, 1893) and Shadymoor (Hamilton, 1905). It has also been recorded on the Long Mynd by J.G. Duckett in 1975.

***Microbryum rectum*** (With.) R.H. Zander

**Upright Pottia**

A minute ephemeral plant of disturbed ground, well known in quarries on Wenlock Edge (first recorded by M.F.V. Corley in 1979) and more recently at Oreton (M. Lawley, 1998).

***Microbryum curvicolle*** (Hedw.) R.H. Zander

**Swan-necked Earth-moss**

Another tiny ephemeral plant of disturbed ground, known in quarries on Wenlock Edge (M.F.V. Corley, 1979)

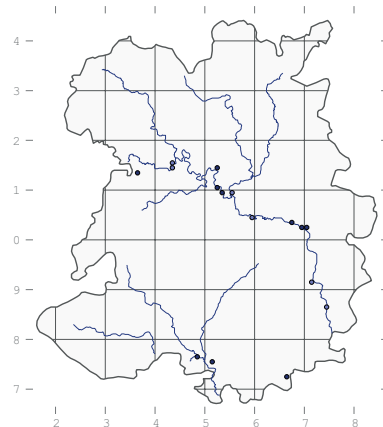
and Oreton (M. Lawley, 1998) and in places like Halford (R.F. Shoubridge, 1998, conf. G.P. Rothero) and Stanton Long Church (Lawley 2004).

***Hennediella stanfordensis*** (Steere) Blockeel

**Stanford Screw-moss**

First record: H.L.K. Whitehouse, 1975, River Severn at Coalport.

First discovered in Britain in 1958 in Cornwall, having possibly been introduced from Australia or America. It has spread rapidly along water courses and is now quite common, and even abundant, in places along the banks of the river Severn where it grows on bare soil. There is a large colony in the grounds of Preston Montford Field Centre on the track down to the river. It is also now known by the rivers Rea (M. Lawley, 2001) and Teme (Lawley, 2006). The national maps show that its populations are centred on the Marches.

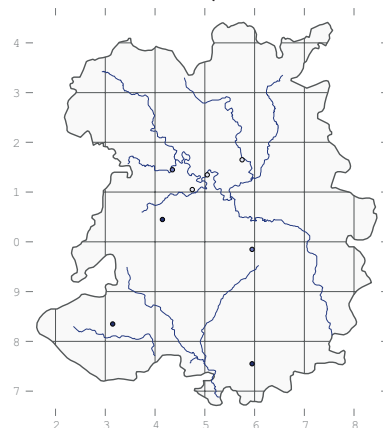


***Acaulon muticum*** (Hedw.) Müll.Hal.

**Rounded Pigmy-moss**

First record (as *Sphaerangium muticum*): R. Anslow, 1870, near Roden.

Typically on bare, base-deficient soils. Its habitat includes 'trees on the brook-side' at Nobold (W.P. Hamilton, 1888), fields at Underdale (Hamilton, 1889), ant hills at Hoar Wood (M. Lawley 1998) and Earl's Hill (F.J. Rumsey, 2005).

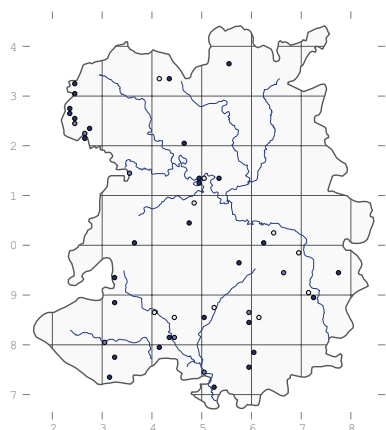


***Syntrichia ruralis*** (Hedw.) F. Weber & D. Mohr

### Great Hairy Screw-moss

First record (as *Tortula ruralis*): Williams, c. 1800, 'on the thatched roofs of houses etc, common.'

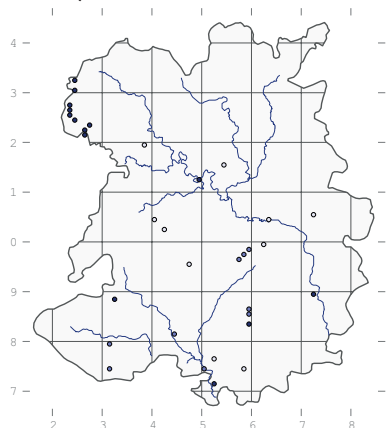
Widespread on walls and bare ground, especially on the more calcareous soils. It is often recorded in limestone quarries such as the old quarry at Much Wenlock (E.B. Benson, 1901) and Lilleshall Quarry on Wenlock Edge (M.F.V. Corley, 1979) or on rock exposures on limestone hills such as Moelydd. In Shrewsbury it grows on walls by the river, as below Marine Terrace near English Bridge. Although not named as such, most of this is probably of the subspecies *ruralis*. The subspecies *ruraliformis* occurs in sandy U1 *Rumex acetosella* at Prees Heath.



### ***Syntrichia montana*** Nees. Intermediate Screw-moss

First record (as *Barbula intermedia*): R.D. Benson, 1893, Pulverbatch.

Fairly common on base rich rocks in places like Haughmond Abbey (W.P. Hamilton, 1893), the bank of the main road near Nesscliffe (R.D. Benson, 1898), old quarries on Wenlock Edge (M.F.V. Corley, 1979) and the walls of the English Bridge in Shrewsbury (M.F. Godfrey, 2010).



***Syntrichia princeps*** (De Not.) Mitt.

### Brown Screw-moss

On base-rich rock outcrops on hills and mountains; largely confined to Scotland. There are three records for Shropshire: on Pontesford [probably Earl's] Hill (R.D. Benson, 1895), Haughmond Hill, 'near the castle' (Hamilton, 1902, SHY), and in old quarries on Wenlock Edge (M.F.V. Corley *et al.*, 1979).

### ***Syntrichia laevipila*** Brid. Small Hairy Screw-moss

First record (as *Barbula laevipila*): R. Anslow, 1870, Crudgington.

On trees, often in open situations. In Shrewsbury it occurs on willows by the Severn in the Quarry (M.F. Godfrey, 2010), and it has been recorded in places like Ashes Hollow (J.G. Duckett, 1974), Ludlow Castle (M. Fletcher, 1979) and Llyncllys Hill (M. Lawley, 2003).

### ***Syntrichia papillosa*** (Wilson) Jur.

#### Marble Screw-moss

First record (as *Tortula papillosa*): A.W. Weyman, 1891, 'apple trunk near Priors Halton, Ludlow.'

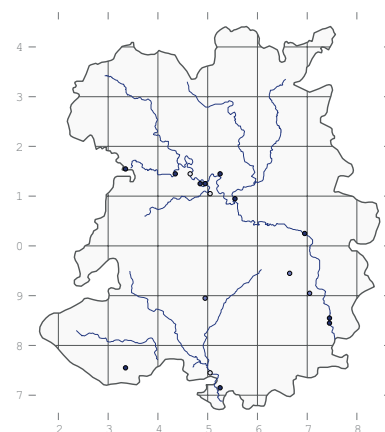
A scarce but very distinctive species. Normally a denizen of mature trees, it seems to be spreading nationally and is now often abundant on tree trunks in towns. It is recorded at Ludlow Castle (M. Fletcher, 1979), at Ashford Bowdler (M. Lawley, 2001) and by the Severn at the English Bridge, Shrewsbury (M.F. Godfrey, 2010).

### ***Syntrichia latifolia*** (Bruch ex Hartm.) Hueb.

#### Water Screw-moss

First records (as *Barbula latifolia*): W.P. Hamilton: Shelton and Sutton, and A.W. Weyman: Halton; all 1893.

In silt on the trunks of trees in river flood zones. Although quite large it can be difficult to detect. It has been found many times along the Severn and Teme since Hamilton and Weyman first recorded it at Shelton and Ludlow, and there are records for the Eaton Brook (N.G. Hodgetts, 1984), Mor Brook (BBS, 1979), Redlake (R.F. Shoubridge, 1998) and the Tern (Hodgetts, 1992). There is a good colony by the Severn at Preston Montford Field Centre (E.J. Rumsey, 2004) and it is quite abundant on willows in Shrewsbury in the Quarry and at the English Bridge (M.F. Godfrey, 2010).

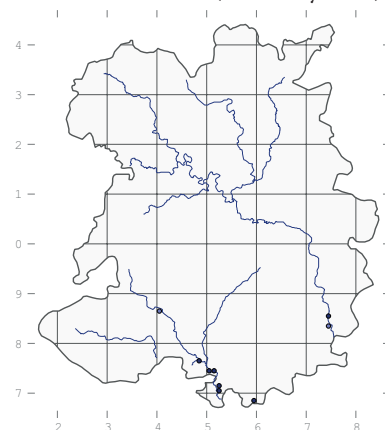


### ***Cinclidotus fontinaloides*** (Hedw.) P. Beauv.

#### Smaller Lattice-moss

First record: A.W. Weyman, 1893, River Teme at Ludlow.

Occasional on rocks and walls by rivers in the south of the county, mainly along the Teme but also by the Onny at Horderley (M.F.V. Corley, 1975) and the Severn at Highley (J.B. Duncan, 1901) and Whithalls Wood (M. Lawley, 2002).



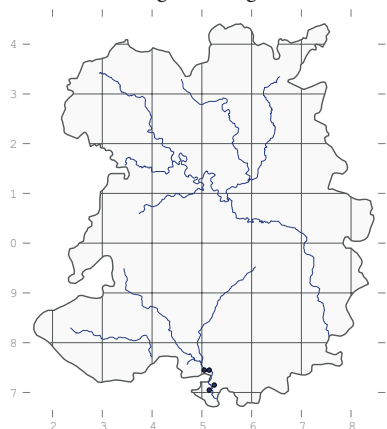
*Cinclidotus fontinaloides*  
(Martin Godfrey)



***Cinclidotus riparius*** (Web. & Mohr) Arnott

**Fountain Lattice-moss**

First found by A.W. Weyman in 1890 on the banks of the Teme in Ludlow (SHY), when it was new to Britain. Weyman struggled to persuade the authorities to accept the record, and it was not until 1996, when it was refound by N.G. Hodgetts, T.L. Blockeel and R.D. Porley (Blockeel, 1998), that it appeared in the catalogues. But it had also been collected by J.B. Duncan in 1919 and P.J. Meyerscough in 1957 (both at E), so it was well known here. It grows on stones and walls at the edge of rivers and it has now been found as far downstream as Ashford Bridge (Hodgetts, 1996) and elsewhere along the Teme in neighbouring counties.



***Tetraplodon mnioides*** (Hedw.) Bruch & Schimp

**Slender Cruet-moss**

First record: A. Ley, 1893, 'in depressions between masses of granite on Titterstone Cleve Hill' (SHY).

On dung and the decaying bones of animal carcasses. It has been recorded several times on Titterstone Cleve and recently on the Stiperstones (L. Fraser, 2008).

***Splachnum ampullaceum*** Hedw.

**Cruet Collar-moss**

First record: R.D. Benson, 1892, 'southern slope of the Stiperstones' (SHY).

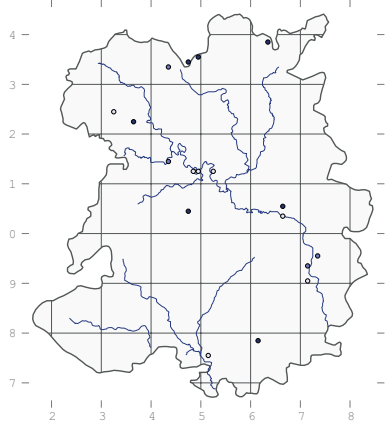
A rare species of sheep dung, also recorded on Catherton Common (J.B. Duncan, 1909) and recently reported from the vicinity of Halford Quarry (SO48, M. Lawley, 1998).

***Leptobryum pyriforme*** (Hedw.) Wils.

**Golden Thread-moss**

First records: Hamilton: Pritchard's Nursery, Shrewsbury; and A.W. Weyman: Riverdale, Ludlow (both 1893).

Typically in flower pots and greenhouses, but also in places like the canal tunnel at Preston Boats (Hamilton, 1904), 'under a semi-transparent cellar-flap in the middle of [Shrewsbury] town' (Hamilton, 1901) and Shotatton Quarry (M. Lawley, 2006). It has also been recorded at Whixall Moss (M.E. Newton, 1993), Wem Moss (Newton, 1999) and Shavington Park (M.F. Godfrey, 2009).



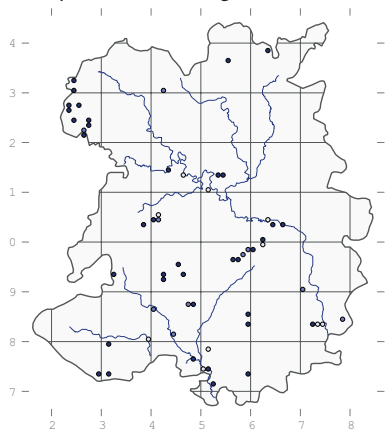
***Zygodon viridissimus*** (Dicks.) R.Br.

**Green Yoke-moss**

First records: R. Anslow, 1870, Buildwas and Much Wenlock.

On limestone and other base-rich rock outcrops, and occasionally on walls. On Earl's Hill it is rare in the W21 *Crataegus monogyna* scrub, on the bark of *Sambucus nigra* in W8 *Fraxinus excelsior* woodland and in the U1 *Rumex acetosella* grassland on the scree slope (R.D. Porley, 1986). It has also been recorded on Elder in Thieves' Lane (Hamilton, 1905) and on sandstone at Highley (J.B. Duncan, 1902).

The varieties *viridissimus* and *stirtonii* (Schimp. ex Stirt.) Hagen are both widely recorded throughout.

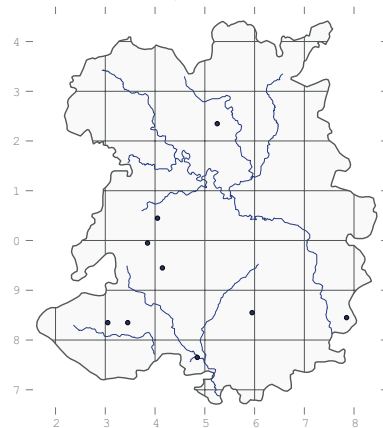


***Zygodon rupestris*** Schimp. ex Lor.

**Park Yoke-moss**

First record: S Kingsbury, 1989, Pole Bank.

An epiphyte on trees in places like Walcot Park (F. Rose 1991), Earl's Hill (F.J. Rumsey, 2004) and Gittinshay Wood (M. Lawley, 2003).

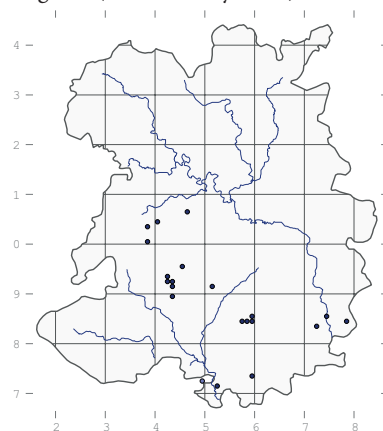


***Zygodon conoideus*** (Dicks.) Hook. & Taylor

**Lesser Yoke-moss**

First record: M.O. Hill, 1975, Ashes Hollow.

Typically on Elder, but also recorded on Hawthorn at Earl's Hill (R.D. Porley, 1986). There are recent records for places like Callow Hollow (M.E. Newton, 1994), Whithalls Wood (M. Lawley, 2002), Lyth Hill (D.H. Wrench, 2003) and the Borle Brook at New England (M.F. Godfrey, 2010).



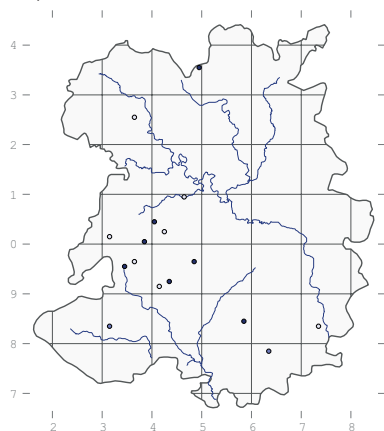
***Orthotrichum lyellii*** Hook. & Taylor

**Lyell's Bristle-moss**

First record: R.D. Benson, 1893, 'Minton Beach'.

A large and conspicuous plant, usually an epiphyte on species such as an oak at Meadowtown (W.P. Hamilton, 1897, SHY) or Elder in W8 *Fraxinus excelsior* woodland on Earl's Hill (R.D. Porley, 1986), and sometimes on boulders, as at Catherton Common (J.B. Duncan,

1910). There are recent records for Whixall Moss (N.G. Hodgetts, 1992), Comley Quarry, Black Rhadley and Brook Vessons (all M. Lawley, 1996-'03).



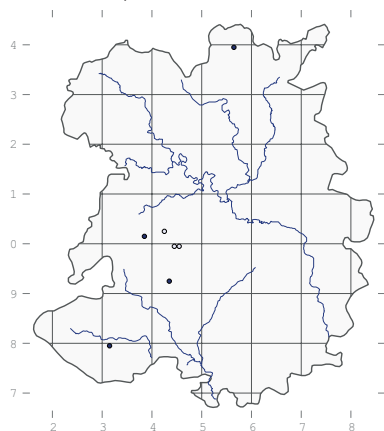
### *Orthotrichum striatum*

Hedw.

#### Shaw's Bristle-moss

First record: Williams, c. 1800, 'trunks of trees, common.'

Now a rather rare species, having been largely eliminated by air pollution in the 19<sup>th</sup> century. In 1893 Hamilton recorded it in Smethcott Hollow and in 1897 R.D. Benson found it at Pulverbatch, but it was not seen again until 1995 when A.R. Perry recorded it at Rock of Woolbury. It has since turned up at Brown Moss (S.D.S. Bosanquet, 2007) and The Hollies (L. Fraser, 2008).



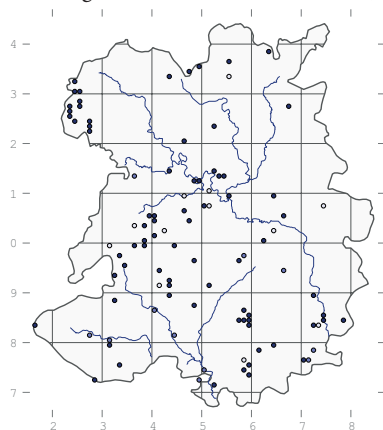
### *Orthotrichum affine* Brid.

#### Wood Bristle-moss

First record: Hamilton, 1890, 'the Coppice, Red Hill' (SHY).

Common on trees and only occasionally on rocks. At Earl's Hill it is found on Elder in the W8 *Fraxinus excelsior* woodland and on hawthorn in the W21 *Crataegus monogyna* scrub (R.D. Porley, 1986). It has also been recorded on Elder at Thieves' Lane (Hamilton, 1905), Hall of Hammonds (M.C. Clark, 1960, BIRM) and by the

Severn at Preston Montford (E.F. Warburg, 1957 – K.A. Crowther, 1998).



### *Orthotrichum rupestre*

Schleich. ex Schwaegr.

#### Rock Bristle-moss

Just one record: on the Long Mynd near Wentnor (R.D. Benson, 1891, NMW, SHY). A species of strongly northern and western distribution in Britain.

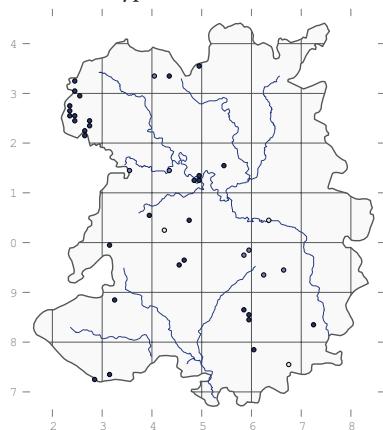
### *Orthotrichum anomalum*

Hedw.

#### Anomalous Bristle-moss

First record: R.D. Benson, 1893, Pulverbatch.

Frequent in the limestone districts in places like Wenlock Edge (first recorded at Buildwas by W.H. Painter in 1904), Llanymynech Rocks (J.L. Daniels, 1992) and Moelydd (R. Green, 2002), but also in towns such as Shrewsbury, where it grows in OV20 *Sagina procumbens* (M.F. Godfrey, 2011), in a typical urban wall habitat.



### *Orthotrichum cupulatum*

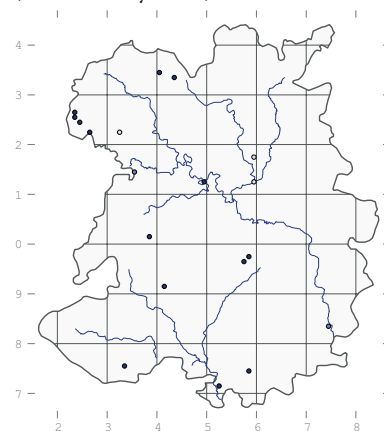
Brid.

#### Hooded Bristle-moss

First records: R. Anslow, 1870, High Ercall, Osbaston and Walcot.

In similar places to *O. anomalum* and only readily identifiable in the spring in the presence of ripe capsules. There are recent records for places like the

Llangollen Canal at Ellesmere (C.C. Townsend, 1992), Wenlock Edge (A.R. Perry, 1995), and on a gravestone at St Mary's in the middle of Shrewsbury (M.F. Godfrey, 2010).



### *Orthotrichum rivulare*

Turner

#### River Bristle-moss

First record: Hamilton, 1897, Earl's Hill.

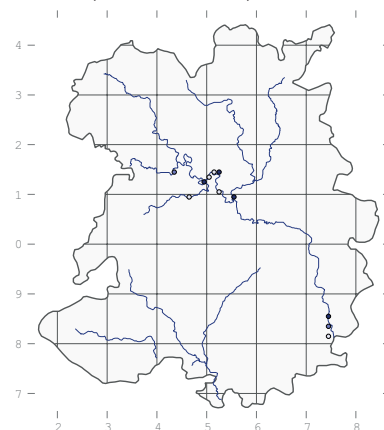
On the bases of trees in the flood zone of rivers. It is well known at Earl's Hill, where it grows 'on rocks in the channel of the Habberley Brook' (R.D. Porley, 1986). Two good sites for it are on willows by the Severn in the Quarry in Shrewsbury and on Alder and willows by the Severn at Preston Montford Field Centre (both M.F. Godfrey, 2010).

### *Orthotrichum sprucei* Mont.

#### Spruce's Bristle-moss

First record: Hamilton, 1893, New Park, Shrewsbury.

Very similar to *O. rivulare*, but generally smaller than that species and with larger leaf cells, which are detectable in the field with a  $\times 20$  lens. It is well known along the Severn in places like Preston Montford (N.G. Hodgetts, 1984) and along the Tern at Attingham (Hodgetts, 1992). It was once recorded on the Rea Brook at Redhill (Hamilton, 1898).



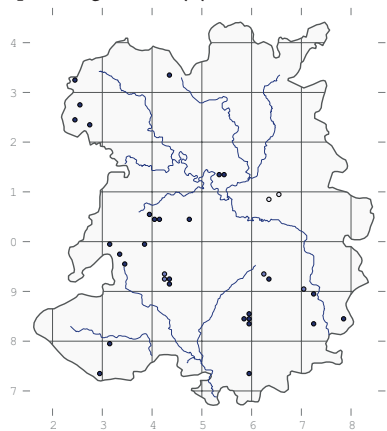
## *Orthotrichum stramineum*

Hornsch. ex Brid.

### Straw Bristle-moss

First records: R. Anslow, 1870, Steeraway and the Wrekin.

On a variety of trees, usually on the hills. At Earl's Hill it is rare on Elder in the W8 *Fraxinus excelsior* woodland (R.D. Porley, 1986), and it is well known in batches on the Long Mynd (first recorded by J.B. Duncan in 1910). In recent years it has been turning up in many new sites such as Rock of Woolbury (A.R. Perry, 1995), Stapeley Hill (M. Lawley, 1998), by the Borle Brook at New England (M.F. Godfrey, 2010) and Haughmond Hill (M.O. Hill, 2012). Hamilton (1909) considered the early records by Anslow to have been errors (which is quite possible, in which case the first record should be Duncan's from 1910), and it suggests that the species has been slowly spreading for many years.



*Bryum weigelii* (Dan Wrench)

## *Orthotrichum tenellum*

Bruch ex Brid.

### Slender Bristle-moss

First record: M.C. Clark, 1960, 'on elders by large pool, Hall of Hammonds' (BIRM).

Probably increasing as a result of lower levels of air pollution. It turned up in the Shropshire Council quarry survey at Stapleton and Nills Hill (both M. Lawley, 2007) and has subsequently been recorded at the Hollies (L. Fraser, 2008), Aston Botterell (Lawley, 2010) and Haughmond Hill (M.O. Hill, 2012).

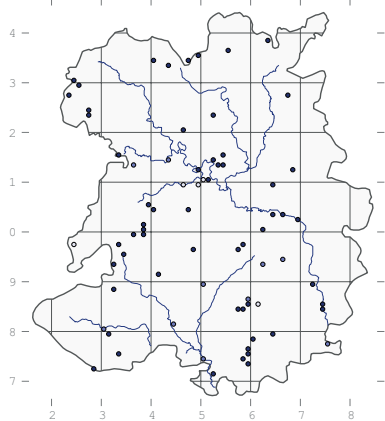
## *Orthotrichum diaphanum*

Brid.

### White-tipped Bristle-moss

First record: Hamilton, 1893, Redhill Coppice.

An easy species to identify, with its long white leaf tips. It is almost ubiquitous on a variety of trees throughout the county. At Earl's Hill it is 'occasional on branches, particularly of *Sambucus nigra*, in the ash wood, and rare on hawthorn in scrub' (R.D. Porley, 1986). It is also recorded on Elder in Thieves' Lane (Hamilton, 1905, SHY) and on a block of concrete by a small reservoir at Buttonoak (M.C. Clark, 1959, BIRM).



## *Orthotrichum pulchellum*

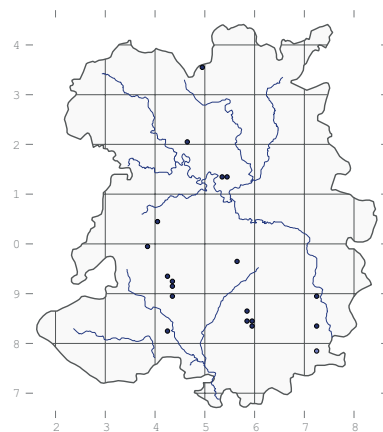
Brunt.

### Elegant Bristle-moss

First record: M.C. Clark, 1960, 'on elders, by a large pool, Hall of Hammonds' (BIRM)

(NB. There are two records for c. 1870 at Eyton upon Weald Moors and Crudgington, both by Anslow, but these were not accepted by Hamilton in the absence of a specimen.)

An epiphyte on trees, often by water, recorded recently in places such as Whixall Moss (M.E. Newton, 1993), Merrington Green (R. Green, 2001), Haughmond Hill (M.F. Godfrey, 2006) and Eardington Plant Quarry (M. Lawley, 2006).



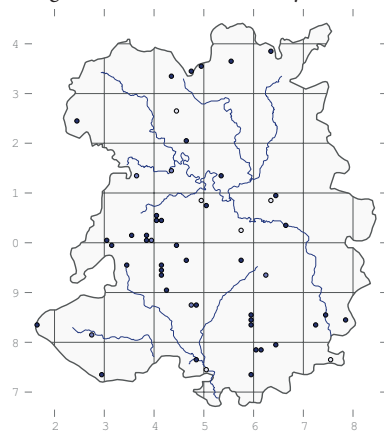
## *Ulota crispa* (Hedw.) Brid.

### Crisped Pincushion

First records (as *Orthotrichum crispum*): Williams, c. 1800, 'trunks of trees in Bomere Wood; in abundance in the Vessons Wood on the east side of the Stiperstones'.

A very common epiphyte found throughout the county on a variety of trees. It is similar to the following species, and they can only be satisfactorily told apart in the presence of ripe capsules. It is accepted that, nationally, *U. crispa* has been over-recorded for *U. bruchii*.

At Earl's Hill it is 'rare in the ash woodland on the bark of *Sambucus nigra* and in Oaks Wood on *Quercus petraea*, and found also on *Crataegus monogyna* in the wet meadow' (R.D. Porley, 1986, PVT). Other good places to look for it include Bowhills Dingle (first recorded there by J.B. Duncan in 1903) and Haughmond Hill (M.F. Godfrey, 2006).



## *Ulota bruchii* Hornsch. ex

Brid.

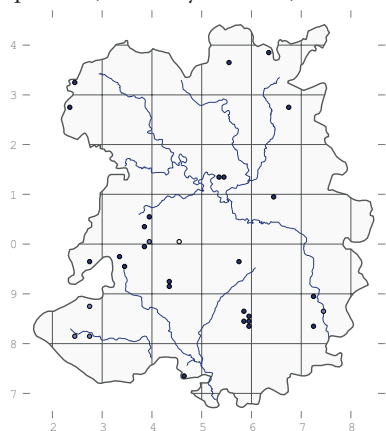
### Bruch's Pincushion

First record: J.B. Duncan, 1906, Smethcott Hollow.

A common epiphyte in woods, not often recorded until recently, when it was found at Brook Coppice (M.E. Newton, 1981), Hongrass Wood, Whitcott Evan Hill and Fron Wood, Mainstone (all R.D. Porley, 1986). More



recently it has turned up in places like the Ercall (Newton, 1999), Haughmond Hill (M.F. Godfrey, 2006), Prees Heath (Godfrey, 2007) and in numerous quarries (M. Lawley, 2006-'07).

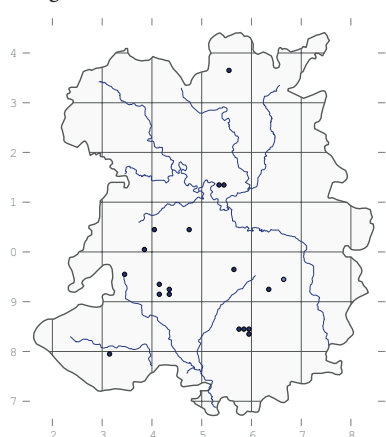


### *Ulota phyllantha* Brid.

#### Frizzled Pincushion

First record: British Bryological Society, 1979, Ash Bridge, Morville.

Until comparatively recently the species was encountered primarily on western coasts but in the latter part of the 20<sup>th</sup> century it spread inland and is now quite common. Sites for it include Rock of Woolbury (A.R. Perry, 1995), Brook Vessons (M. Lawley, 2003), Earl's Hill (N.G. Hodgetts, 2007) and Haughmond Hill (M.O. Hill, 2012).



### *Hedwigia ciliata* (Hedw.)

P. Beauv.

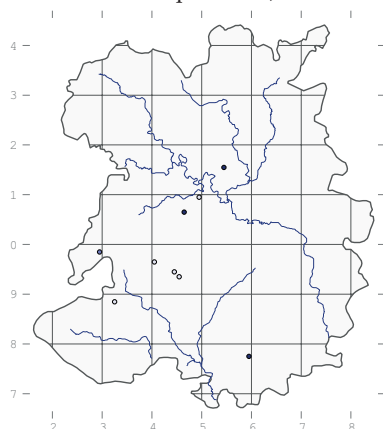
#### Fringed Hoar-moss

First record (as *Anictangium ciliatum*): J.J. Dillenius, 1747, 'hills about Bishop's Castle' (Turner & Dillwyn, 1805).

On bare rock in open habitats. Some of the older records may have been of the commoner *H. stellata*, which was only clearly separated recently.

*Hedwigia ciliata* s.s. is well known at Haughmond Abbey, where it was first recorded by Leighton, probably around 1841, and a specimen at SHY which was collected by Hamilton in 1889 has been confirmed by M.F. Godfrey. It is

still there now (Godfrey, 2006). Other places where it has been recorded include the Lump, Priestweston (P.M. Benoit, 1981), Titterstone Clee (F. Rose, 1987) and Lyth Hill (M. Lawley, det. S.D.S. Bosanquet, 2005).

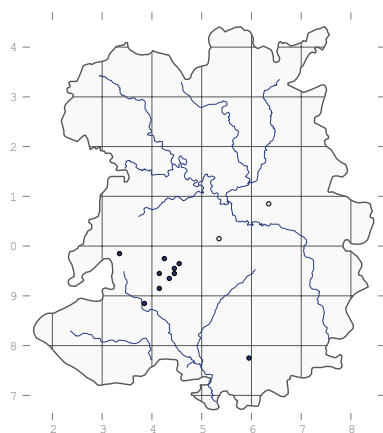


### *Hedwigia stellata* Hedenäs

#### Starry Hoar-moss

First record (as *Tortula stellata*): E. Williams, c. 1800, 'springs on Acton Burnell Hill by the side of the drive; at the north end of the Wrekin'.

Well known on the Long Mynd, where it was first recorded in several places by M.E. Newton in 1994, and subsequently found on Titterstone Clee (N.G. Hodgetts, 1996) and Grit Hill (M. Lawley, 2002). Some records of the previous species may be errors for this one.



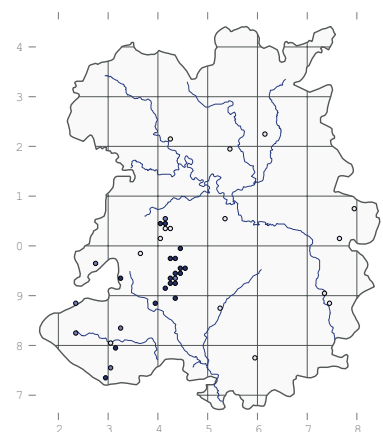
### *Bartramia pomiformis*

Hedw.

#### Common Apple-moss

First record: Williams, c. 1800, 'ditch banks on Shawbury Heath and about Eaton [Mascott]'.

Occasional on eroding banks on the hills in places like Ashes Hollow (first recorded by J.B. Duncan in 1906) and Rock of Woolbury (Duncan, 1913 – A.R. Perry, 1995). At Earl's Hill it is 'occasional on the cliff face, rare on scree; rare on conglomerate outcrop in Oaks Wood' (R.D. Porley, 1986).



### *Bartramia ithyphylla* Brid.

#### Straight-leaved Apple-moss

First record: Hamilton, 1886, 'wood on hill-side between Church Stretton and Little Stretton' (SHY).

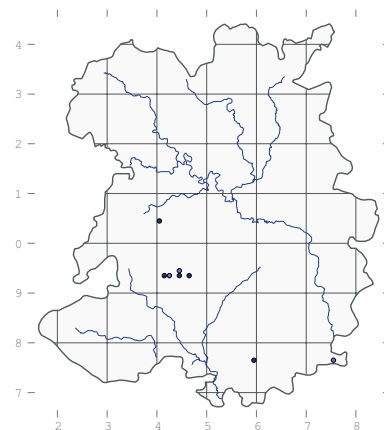
On base-rich rocks, well known on the Long Mynd in places like Callow Hollow (first by J.B. Duncan in 1910) and Carding Mill Valley (M.E. Newton, 1994), and also reported from Brick House (A.W. Weyman, 1893), Marrington Dingle (Hamilton, 1901) and Poles Coppice (M. Lawley, 2005).

### *Philonotis arnellii* Husn.

#### Arnell's Apple-moss

First record (as *Philonotis capillaris*): J.B. Duncan, 1906, Wyre Forest (SHY).

Usually found on soil or soil-filled rock crevices in moist habitats by streams and rivers. It is well known on the Long Mynd, where it was first recorded by G. Bloom in 1974. On Earl's Hill it was first found by J.G. Duckett in 1975 and was described as 'rare... one patch at margin of ash woodland' by R.D. Porley in 1986. There is also a recent record of it on Titterstone Clee (D.H. Wrench, 2004).



***Philonotis caespitosa* Wils.  
ex Milde**

**Tufted Apple-moss**

First record: E.W. Jones, 1933, 'west slope of Titterstone Clee', det. M.O. Hill, BBSUK.

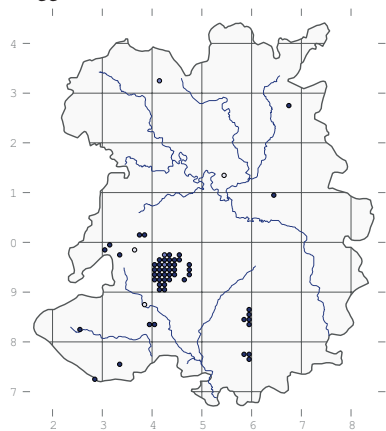
Typically in upland flushes and damp stream banks, but also once recorded in M23 *Juncus effusus* at Cole Mere (M.J. Wigginton, 1979). It has also been recorded in Callow Hollow (M.E. Newton, 1993), Townbrook Hollow (M. Lawley, det. G.P. Rothero, 2009) and at Llanwolley (Lawley, 2011).

***Philonotis fontana* (Hedw.)  
Brid.**

**Fountain Apple-moss**

First record (as *Bartramia fontana*): Williams, c. 1800, 'springs'.

A common, easily identified and abundant member of our marsh and flush flora. It has been recorded in M6 *Carex echinata* in Colliersford Gutter (R. Tapper, 1983); M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M23 *Juncus effusus* in several places on the Long Mynd (Tapper & C.M. Owen, 1983); M29 *Potamogeton polygonifolius* in Callow Hollow (Tapper, 1983); M35 *Montia fontana* on Caer Caradoc (R. Meade, 2010), Carding Mill Valley, Wild Moor (both Tapper, 1983) Ashes Hollow, Jonathan's Hollow and Long Batch (all D.A. Callaghan, 2012); and in OV30 *Bidens tripartita* community on the margin of White Mere (M.J. Wigginton, 1979).



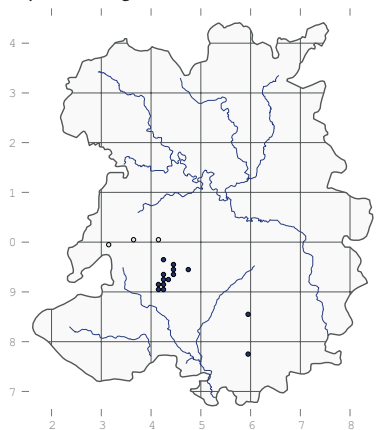
***Philonotis calcarea* (Bruch &  
Schimp.) Schimp.**

**Thick-nerved Apple-moss**

First record: R.D. Benson, 1892, 'Stapeley Hill. Abundant male flowers' (SHY).

Restricted to the more base-rich flushes in places like Caer Caradoc, where it occurs in M13 *Palustriella commutata* (R. Meade, 2010). It is also known in some of the batches on the Long Mynd, such as Ashes Hollow

(first recorded by M.O. Hill in 1975), Callow Hollow (N.G. Hodgetts, 1984), Minton Batch and Townbrook Hollow (both M.E. Newton, 1994) as well as on Wild Moor (F.J. Rumsey, 2007). Elsewhere in the county it occurs on Brown Clee (G. Bloom, 1979) and Titterstone Clee (J.B. Duncan, 1901 – N.G. Hodgetts, 1996), and it was once recorded on the Stiperstones, in Mytton Dingle (Hamilton, 1893).

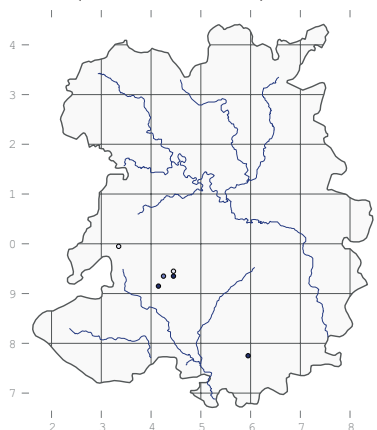


***Breutelia chrysocoma*  
(Hedw.) Lindb.**

**Golden-head Moss**

First record (as *Breutelia arcata*): Hamilton, 1890, the Long Mynd.

In areas of wet, unshaded heathland and in flushes, by streams and on wet rock ledges. It is well known on the Long Mynd in places like Minton Batch and Townbrook Hollow, and it has been recorded on Titterstone Clee (firstly by A.W. Weyman, 1893) and Shelve (R.D. Benson, 1893).



***Anomobryum julaceum* (P.  
Gärtn., B. Mey & Scherb.) Schimp.**

**Slender Silver-moss**

First record (as *Bryum julaceum*): Williams, c. 1800, Downton.

On moist, base-enriched, locations by streams and on wet rock. It is recorded only on the Long Mynd, in The Batch, Carding Mill Valley and Townbrook Hollow (all M.E. Newton, 1994).

***Anomobryum concinnatum*  
(Spruce) Lindb.**

**Neat Silver-moss**

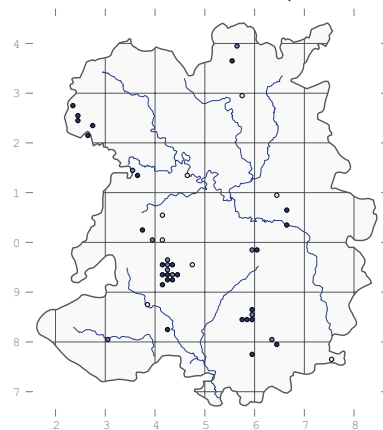
Just two records: at Light Spout (SO413950, M. Lawley, 2002) and Windy Batch (SO420911, D.A. Callaghan, 2013).

***Bryum pallens* Sw.**

**Pale Thread-moss**

First record: R. Anslow, 1865, The Ercall.

On moist, bare soil in damp base-rich habitats, including ruderal sites. It has been recorded in M35 *Montia fontana* at Lightspout Hollow and Wild Moor (both R. Tapper, 1983). It is found mostly in the uplands but also in lowland sites like Alberbury Quarry (M.E. Newton, 1980) and Prees Heath (M.F. Godfrey, 2007).



***Bryum weigelii* Spreng.**

**Duval's Thread-moss**

First record (as *Bryum duvalii*): J.B. Duncan, 1906, Ashes Hollow and Carding Mill Valley.

In M35 *Montia fontana* and M36 *Chrysosplenium oppositifolium* in springs on the Long Mynd (D.A. Callaghan, 2012). It was also once recorded on Brown Clee, by Sinker in 1968, although no precise location was given. A good place to see it is at Boiling Well, SO42029447 (F.J. Rumsey, 2004). This is a rare plant in England, not otherwise found south of the Lake District.

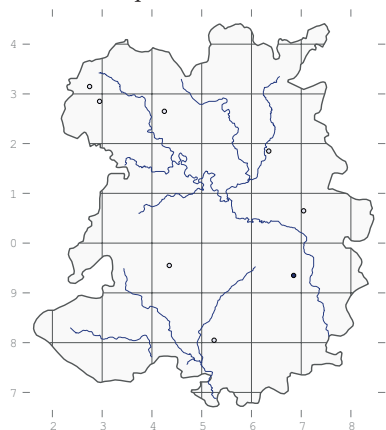
***Bryum algovicum* Sendtn. ex  
Müll.Hal.**

**Drooping Thread-moss**

First record (as *Bryum pendulum*): A.W. Weyman, 1893, Hayton's Bent.

One of a number of *Bryum* species which cannot be determined without microscopic examination of the peristome teeth. We do not know of any voucher specimens supporting the old records, which are for Lightspout

Hollow (Hamilton, 1893), Crudgington (R.D. Benson, 1898), Brogyntyn Park and Westoncommon (both E.B. Benson, 1901), Oswestry (Hamilton, 1901) and Stirchley (W.H. Painter, 1905). The only recent record is from a sand quarry at Morville (SO680934, S.D.S. Bosanquet, 2009).



### *Bryum archangelicum*

Bruch. & Schimp.

#### Small-mouthed Thread-moss

First record: Hamilton, 1893, Stapeley Hill.

On basic habitats such as sandy soil, walls and rock crevices, with recent records for the Ercall (M.E. Newton, 1999), Hilton Sand Pit and Lilleshall Quarry (both M. Lawley, 2006) and Prees Heath (M.F. Godfrey, 2007).

### *Bryum intermedium* (Brid.) Bland.

#### Many-seasoned Thread-moss

First records: R. Anslow, c.1865, the Ercall, Ellerdine and Limekiln Wood.

A casual of bare ground with very few records. It has been found at Belvidere (Hamilton, 1886), Woofferton (A.W. Weyman, 1893), Stirchley (W.H. Painter, 1899) and in three places in the recent Quarries Survey – Venus Pool, Carreg-y-big and Old Farm Quarry, Stapleton (all M. Lawley, 2006-'07).

### *Bryum donianum* Grev.

#### Don's Thread-moss

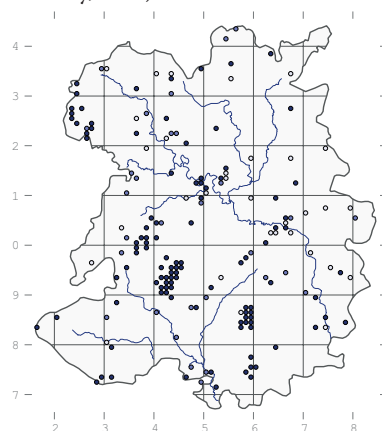
Recorded by J.B. Duncan at Quatford (1914 & 1919) and at High Rock, Bridgnorth (1914). This is a lowland species of well drained soils with a rather southern and western distribution nationally. Although it may well be extinct in the county it does look rather like the very common *Bryum capillare* so it is probably worth giving that species a second look, just in case.

### *Bryum capillare* Hedw.

#### Capillary Thread-moss

First record (as *B. stellare*): Williams, c. 1800, 'ditch banks.'

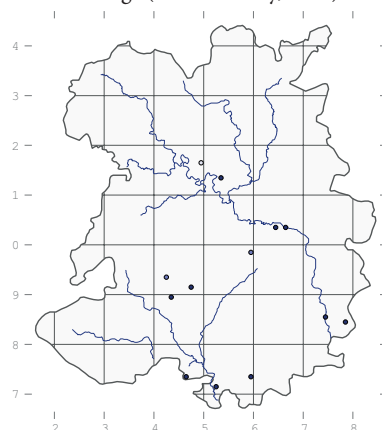
Common on walls, rock outcrops, quarries and as an epiphyte on trees. It is often found in W8 *Fraxinus excelsior* woods in places like Craig Sychtyn (Trueman, 1981) and seems to show a slight preference for limestone areas, but it occurs in a wide variety of other habitats. A good place to find it is on walls and other ruderal habitats near the Sever in Shrewsbury in OV20 *Sagina procumbens* community (M.F. Godfrey, 2011).



### *Bryum moravicum* Podp.

First record (as *Bryum capillare* var. *flaccidum*): Hamilton, 1901, 'near Hencote Pool' (SHY).

Typically in woods throughout the county, such as Benthall Edge (J.W. Bates, 1992), Bringewood Chase (A.R. Perry, 1994), Haughmond Hill (M.F. Godfrey, 2006), the Novers (M. Lawley, 1994) and Wenlock Edge (M.E.V. Corley, 1979).



### *Bryum canariense* Brid.

#### Canary Thread-moss

Just one site: on Llanymynech Hill, where it was first recorded by E.F. Warburg in 1957, and it was still present at Blodwel Rock in 2005 (SJ267230, M. Lawley, det. D.T. Holyoak, BBSUK).

### *Bryum pallescens* Schleich. ex Schwaegr.

#### Tall-clustered Thread-moss

First record: W.H. Painter, 1901, Little Wenlock (det. J.E. Bagnall).

In scattered locations such as Craig-llwyn (P.M. Benoit, 1987), Gravels mine (BBS, 2004), at the base of a building at Wheathill (L. Fraser, 2004) and on concrete by the Ledwyche Brook at Poughnhill (M. Lawley, 2012).

### *Bryum pseudotriquetrum*

(Hedw.) P. Gärtn., B. Mey. & Scherb.

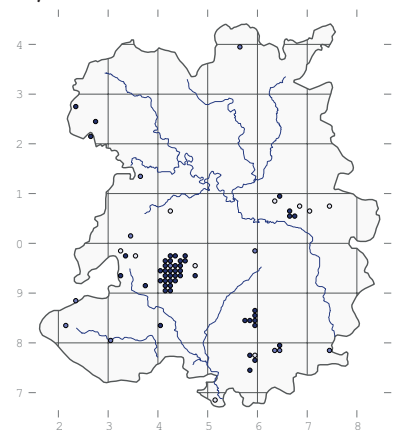
#### Marsh Bryum

First record (as *Bryum ventricosum*): Williams, c. 1800, 'springs at the east end of the Wrekin.'

In marshes, flushes and fens and even on wet soil by streams. It has been recorded in M10 *Carex dioica* on Hope Bowdler Hill (P. Eades, 2010); M23 *Juncus effusus* at Upper Darnford (R. Tapper, 1983), Gogbatch (C.M. Owen, 1983), Callow Hollow and Catbatch (both D.A. Callaghan, 2012); M29 *Potamogeton polygonifolius* soakways in Callow Hollow (Tapper, 1983); and M35 *Montia fontana* at Boiling Well, Lightspout Hollow and Wild Moor (Tapper & Owen, 1983).

It also occurs on Brown Clee (first recorded by Sinker in 1968), Catherton Common (C. Walker, 1981), Dolgoch Quarry, Hopesay Hill (R.F. Shoubridge, 1998), Alberbury Quarry (M.E. Newton, 1980), Shelve Hill (Hamilton, 1892) and the Ercall (Newton, 1999).

There are some lowland localities where it has not been recorded for some time, such as Dawley, Shifnal and Stirchley (all W.H. Painter, 1897-1903), Hencott Pool (Hamilton, 1893) and the Wyre Forest (M.C. Clark, 1955).



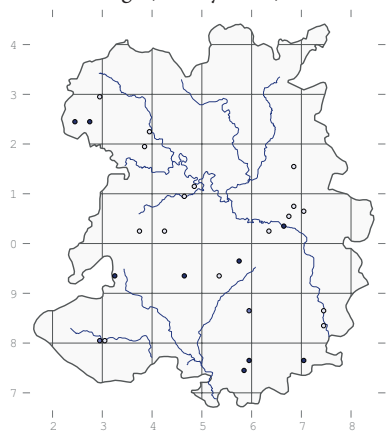


***Bryum caespiticium* Hedw.**

**Tufted Thread-moss**

First record: R.D. Benson, 1893, 'common.'

Occasional on rocks, roadsides and walls, mainly on base-rich substrates. There are recent records for places like Benthall Edge (N.G. Hodgetts, 1992), the Wyre Forest (R.F. Shoubridge, 1998), Jones's Rough (M. Lawley, 2003) and Titterstone Cleve (D.H. Wrench, 2004). A good place to look for it is in a limestone quarry such as Lilleshall Quarry on Wenlock Edge (Lawley, 2006).



***Bryum kunzei* Hornsch.**

**Funck's Thread-moss**

Rare on limestone outcrops on Moelydd (SJ242253, P.M. Benoit, 1978, NMW).

***Bryum argenteum* Hedw.**

**Silver-moss**

First record: Williams, c. 1800, 'on walls, roofs of houses and ditch banks, common.'

Throughout the county in ruderal habitats, even growing between pavement cracks in town centres, typically in OV20 *Sagina procumbens* in Shrewsbury (M.F. Godfrey, 2011) and in U1 *Rumex acetosella* at Prees Heath. On Earl's Hill it is 'occasional on paths, rare in hill grassland on the west side' (R.D. Porley, 1982).

***Bryum gemmiferum***

C. Wilczek & Demaret

**Small-bud Bryum**

First record: P. Martin, 1992, Llangollen Canal at Whixall Moss (det. T.L. Blockeel, BBSUK).

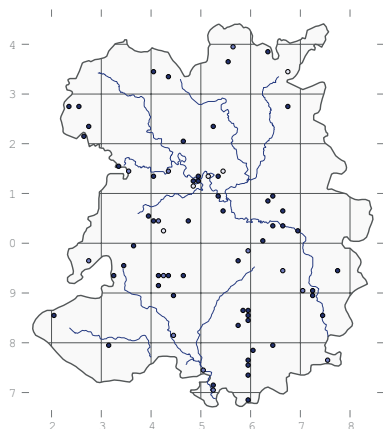
On well drained but periodically wet soils. It is recorded in arable fields at Atcham and Lower Betton (both J.D. Sleath, 2002), in old quarries at Venus Pool and Eardington (both Lawley, 2006), and in OV20 *Sagina procumbens* community on walls in Shrewsbury (M.F. Godfrey, 2011).

***Bryum dichotomum* Hedw.**

**Bicoloured Bryum**

First record (as *B. atropurpureum*): Hamilton, 1893, 'the cemetery, Shrewsbury' (SHY).

Throughout the county on disturbed soils, as in OV20 *Sagina procumbens* on walls and pavements in Shrewsbury (M.F. Godfrey, 2011). On Earl's Hill it is described as 'frequent on paths' (R.D. Porley, 1986); at Atcham and Ford it was recorded in arable fields (both J.D. Sleath, 2002) and in the Wyre Forest it was recorded 'on the gravelly road outside the University [of Birmingham] Field Lab.' (S.W. Greene, 1958, BIRM).

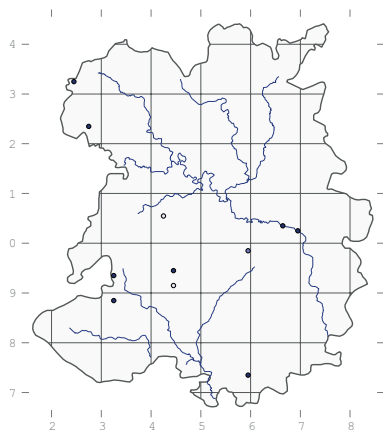


***Bryum radiculosum* Brid.**

**Wall Thread-moss**

First record (as *Bryum murale*): R.D. Benson, 1891, 'mortar of walls at Longden Manor'.

Occasional on walls and in old quarries, especially limestone quarries on Wenlock Edge (M.F.V. Corley, 1979), at the Novers and Crickheath Hill (M. Lawley, 2006-'07) and on walls in places like Little Stretton (J.B. Duncan, 1906), Coalport (BBS, 1992) and Bishops Castle Church (Lawley, 2001).



***Bryum ruderale* Crundw. &**

Nyholm

**Pea Bryum**

First record: C.C. Townsend, 1992, 'canal bank south of Ellesmere.'

On bare, trampled ground; recorded at Llanymynech Rocks (J.L. Daniels, 1992), in a garden in Castlefields, Shrewsbury (F. Bentley, det. D.T. Holyoak, 2001), on Haughmond Hill (M.F. Godfrey, 2006) and in Cynynion and Eardington quarries (both M. Lawley, 2006).

***Bryum violaceum* Crundw. &**

Nyholm

**Pill Bryum**

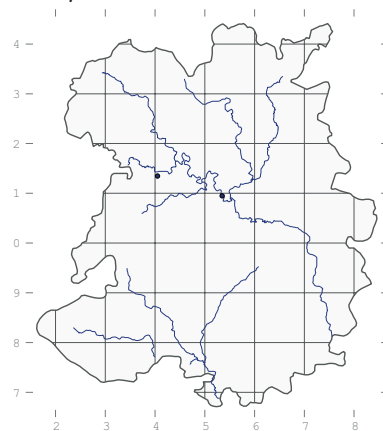
Recorded in fields at Ford and Atcham (both J.D. Sleath, 2002).

***Bryum klinggraeffii* Schimp.**

in Klinggr.

**Raspberry Bryum**

Although this species has been listed for Shropshire in atlases and checklists for decades, the first full records were made as recently as 2002, in fields at Atcham, Ford and Lower Betton by R.D. Porley, R.J. Fisk and J.D. Sleath respectively, during the recent BBS arable weeds survey. It has since been recorded in several places, including Pimhill Farm (Fisk, 2004), Wheathill (L. Fraser, 2004) and Venus Pool (M. Lawley, 2006).



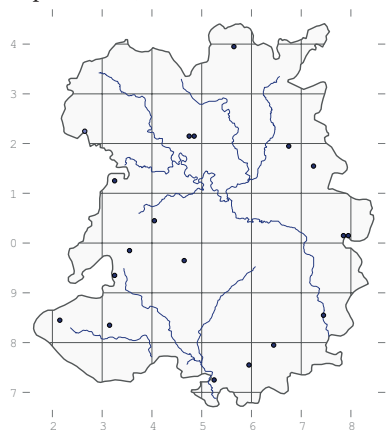
***Bryum subapiculatum***

Hampe

**Lesser Potato Bryum**

Another species with vague historical records, but no good quality ones until 1985, when it was recorded at Cherington by R.J. Fisk (BBSUK). It has since been found to be fairly widespread in arable fields in places like Pimhill Farm (J.D. Sleath, 2004) and Guilden Down (M. Lawley, 2004) and along paths in places like Earl's

Hill (R.D. Porley, 1986) and on the Stiperstones (D.H. Wrench, 2006).



### *Bryum bornholmense*

Winkelm. & Ruthe

#### Potato Bryum

Just one old record, from the Wyre Forest (J.B. Duncan, 1904, det. A.C. Crundwell & H.L.K. Whitehouse, E). It has recently been recorded on the Worcestershire side of the boundary.

### *Bryum rubens* Mitt.

#### Crimson-tuber Thread-moss

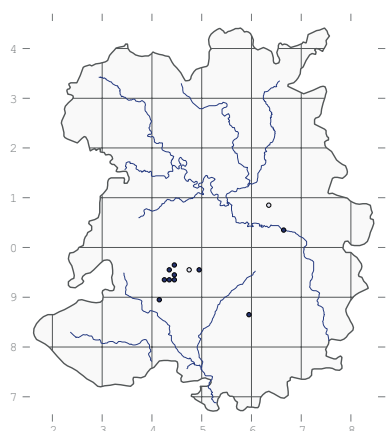
First record: R.D. Benson, 1897, 'old sand pit near Stapleton' (det. H.N. Dixon, SHY).

On disturbed ground and bare soil, often in fallow fields and gardens. It has been recorded in OV20 *Sagina procumbens* in Shrewsbury (M.F. Godfrey, 2011) and on Earl's Hill it is 'occasional on paths, in scrub and on anthills' (R.D. Porley, 1986). Good places to look for it are by the Severn at the English Bridge, Shrewsbury (M.F. Godfrey, 2010) and in old quarries along Wenlock Edge (first recorded here by M.F.V. Corley in 1979).

### *Bryum alpinum* With.

#### Alpine Thread-moss

First record: Williams, c. 1800, 'on the rocks at the top of the Caradoc Hill'.



On damp rocks on hills, often forming reddish clumps. As well as Caer Caradoc, it has been recorded on Benthall Edge (J.W. Bates, 1992 – R. Green, 2000), the Long Mynd (Hamilton, 1887 – L. Fraser, 2007) and the Wrekin (W.H. Painter, 2004).

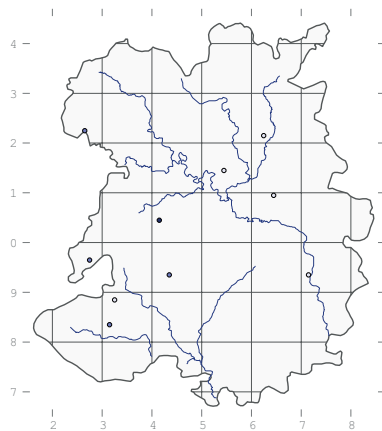
### *Rhodobryum roseum*

(Hedw.) Limpr.

#### Rose-moss

First record: J.J. Dillenius, 1741, 'near Bishops Castle on the road to Clunton'.

An uncommon plant of species-rich grassland such as MG5 *Festuca rubra* meadows on the eastern flank of Earl's Hill, where it typically grows on ant hills. It was first recorded here by R.D. Benson in 1897 and is still present (SJ413048, F.J. Rumsey, 2004). The only other recent site for it is at Marrington Dingle (M.E. Newton, 1980), where it was first seen by Hamilton in 1901, but it has also been recorded at Blodwel Rock (Anon., 1977) and Haughmond Hill (Hamilton, 1884).



### *Pohlia elongata* Hedw.

#### Long-fruited Thread-moss

First record (as *Webera elongata*): Hamilton, 1892, 'Bury Walls, Hawkstone' (SHY).

The only recent record is 'on soil in crevice on conglomerate rock outcrop in Oaks Wood, rare' by R.D. Porley in 1986. There are old records for Whitcliffe (A.W. Weyman, 1893), Rindleford and Bridgnorth (both J.B. Duncan, 1914).

### *Pohlia cruda* (Hedw.) Lindb.

#### Opal Thread-moss

First record (as *Webera cruda*): J.B. Duncan, 1904, Titterstone Clee (SHY).

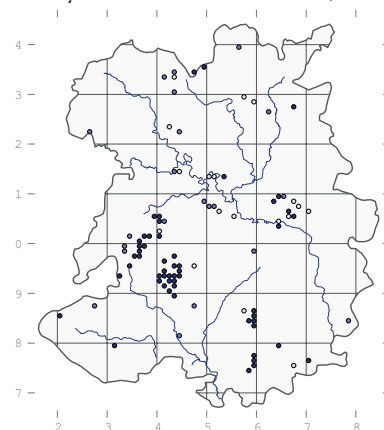
Still present on Titterstone Clee (SO614776, M. Lawley, 2010) and also recorded at Rock of Woolbury (Duncan, 1913) and Garn Rock (Lawley, 2011).

### *Pohlia nutans* (Hedw.) Lindb.

#### Nodding Thread-moss

First record (as *Bryum nutans*): Williams, c. 1800, 'in a boggy field on the south side of Berrington; by the side of Cound Brook about 150 yards below Cound Paper Mill'.

In a variety of habitats, including W4 *Betula pubescens* woodland at Bomere Pool and W5 *Alnus glutinosa* at Blake Mere (both M.J. Wigginton, 1979), as well as spoil heaps at Stoneyhill (Trueman, 1981) and both wet and dry stands of heath at Hodnet Heath (Sinker, 1964). At Earl's Hill it occurs in the acid grassland on the west side of the hill (R.D. Porley, 1986) and it is even recorded in disused limestone quarries on Wenlock Edge (M.F.V. Corley, 1979 and G. Bloom, 1979).



*Philonotis calcarea* (Dan Wrench)



*Leucobryum glaucum* with *Plagiothecium undulatum*

***Pohlia drummondii*** (Müll. Hal.) A.L. Andrews

### Drummond's Thread-moss

First recorded by M. Lawley on a wet gravel bank at Coneyburg Wood (SJ675275, det. G.P. Rothero, 2006) during the Shropshire Council Quarries Survey, and subsequently found in the Wyre Forest (L. Fraser, 2007) and in flushes on Wild Moor (Lawley, 2009).

***Pohlia bulbifera*** (Warnst.) Warnst.

### Blunt-bud Thread-moss

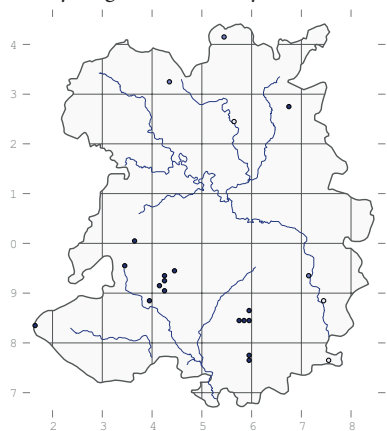
Just one record: in Pattens Rock Quarry (SJ665035, R. Green & M. Lawley, 2000, det. G.P. Rothero).

***Pohlia annotina*** (Hedw.) Lindb.

### Pale-fruited Thread-moss

First record (as *Bryum annotinum*): Williams, c. 1800, 'boggy ground'.

On damp, bare, soil in a variety of habitats including ditches, woodland rides and quarries. It has been recorded in M23 *Juncus effusus* at Cole Mere (M.J. Wigginton, 1979) and it is not uncommon in the batches on the Long Mynd (M.E. Newton, 1994), where it was first recorded by M.O. Hill in 1975. There are also recent records for Titterstone Clee (A.R. Perry, 1994), Black Rhadley (M. Lawley, 2002) and Coneyburg Wood (Lawley, 2006).



***Pohlia camptotrachela*** (Renauld & Cardot) Broth.

### Crookneck Nodding-moss

Just two records: in damp pasture at Wain Common (SO222795, M. Lawley, 2003, det. D.T. Holyoak, BBSUK) and at Brynmawr Farm (L. Fraser, 2008).

***Pohlia lutescens*** (Limpr.) H. Lindb.

### Yellow Thread-moss

First record: T. Laflin (conf. H.L.K. Whitehouse), 1969, 'near Smethcott Church'.

There are only six records for this nationally quite common species. This may well be because it is quite small, often growing as scattered shoots and can be difficult to identify, occasionally needing the microscopic examination of tubers to distinguish it from similar species.

There are records of it in a valley at the north end of the Long Mynd above Hodghurst, at Comley, near Pennerley (all T. Laflin, 1969-'71) and below the camp at the north end of Pontesford Hill (A.R. Perry, 1971). All these records have been confirmed by H.L.K. Whitehouse.

***Pohlia lescuriana*** (Sull.) Grout

### Pretty Nodding-moss

First record: T. Laflin, 1969, Heldre Hill (det. H.L.K. Whitehouse).

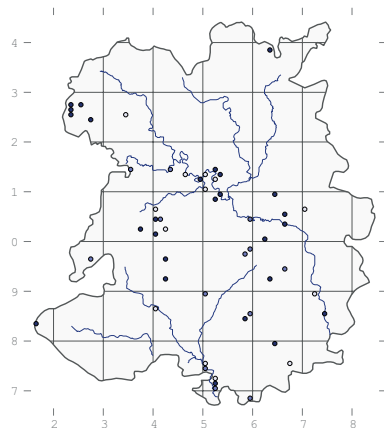
In an old quarry at Coneyburg Wood (M. Lawley, 2006) and in arable fields at Atcham, Ford (both J.D. Sleath, 2002) and Hampton Loade (Lawley, 2000).

***Pohlia melanodon*** (Brid.) A.J. Shaw

### Pink-fruited Thread-moss

First record (as *Webera carnea*): Hamilton, 1887, Shelton Rough (SHY).

Although small, this species is abundant and easy to identify and is found throughout the county. It favours damp clayey substrates and is frequently found on paths and woodland rides. It often occurs by the rivers such as the Onny (Hamilton, 1901), the Mor Brook (J.B. Duncan, 1906), the Teme at Ludlow (N.T.H. Holmes, 1980) and the Severn in Shrewsbury (M.F. Godfrey, 2010) and it sometimes occurs in arable fields, as in 'marl-pit fields, Pulverbatch' (R.D. Benson, 1893) and at Atcham (J.D. Sleath, 2002).

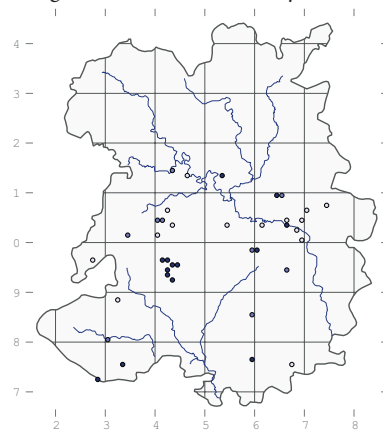


***Pohlia wahlenbergii*** (Web. & Mohr) Andrews

### Pale Glaucous Thread-moss

First record (as *Bryum wahlenbergii*): Williams, c. 1800, 'by the side of Golden Pool'.

In flushes and streams in places like Ashes Hollow (first recorded by J.G. Duckett in 1974), where it grows in M35 *Montia fontana* rills (D.A. Callaghan, 2012). Also recorded at Benthall Edge (J.W. Bates, 1992), Bucknell Wood (R.E. Shoubridge, 1998), Wenlock Edge (M.E. Newton, 1979), the Ercall (Newton, 1999), Titterstone Clee (D.H. Wrench, 2004) and Haughmond Hill (M.F. Godfrey, 2006).



***Epipterygium tozeri*** (Grev.) Lindb.

### Tozer's Thread-moss

Recorded at Oldbury (P.W. Warburg, 1962, BBSUK) and possibly in the Shrewsbury area (SJ41, no date, anon.). It is a plant of bare ground and river banks.

***Mnium hornum*** Hedw.

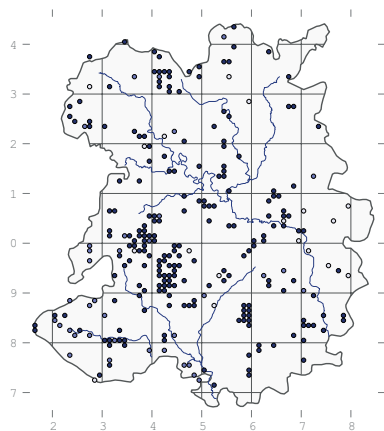
### Swan's-neck Thyme-moss

First record: Williams, c. 1800, 'moist ditch banks and roots of trees in woods'.

Very common in woods, where it has been recorded in W4 *Betula pubescens* at Bomere Pool, Calcott Moss, Haughmond Hill and Lin Can Moss; W5 *Alnus glutinosa* in many places; W6 *Salix × fragilis* at the Alders, Wollaston, Shrawardine Pool and several other places; W7 *Lysimachia nemorum* at Brook Vessons, Upper Vessons and the Ercall (Trueman, 1981); W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981), Haughmond Abbey, Limekiln Wood and elsewhere; W9 *Sorbus aucuparia* at Betchcott Hollow; W10 *Quercus robur* at Harton Hollow, Haughmond Abbey and Muxton Bridge (Trueman, 1981); W16 *Q. petraea* at Oaks Wood and Sowdley Wood; and W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood.



There are also records of it in M23 *Juncus effusus* at Upper Darnford; M35 *Montia fontana* in Carding Mill Valley (both R. Tapper, 1983); and S27 *Comarum palustre* fen at Bomere and Shomere Pools (both M.J. Wigginton, 1979).



***Mnium marginatum* (Dicks.)  
P. Beauv.**

**Bordered Thyme-moss**

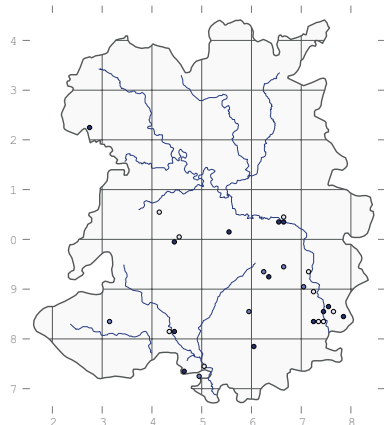
On base-rich soil and rocks by rivers, recorded along the Ledwyche Brook (A.W. Weyman, 1893), in Bowhills Dingle (J.B. Duncan, 1905) and by the Mor Brook (Duncan, 1906). A specimen collected in 2000 from a rotting log across a stream at Bushmoor Coppice (SO430879) was determined by R.F. Shoubridge as this species.

***Mnium stellare* Hedw.**

**Starry Thyme-moss**

First record: Miss Sparkes, 1878, Bridgnorth.

Conspicuous in suitable damp, base rich habitats, on walls and banks in W8 *Fraxinus excelsior* woodland, as at Benthall Edge, where it is frequent along the retaining wall along the old railway (M.F. Godfrey, 2002). Good places to look for it include Bowhills Dingle (first recorded by J.B. Duncan in 1903), Lyd Hole (Hamilton, 1901), Smethcott Dingle (Duncan, 1906) and Pant Quarries (M. Lawley, 2007).

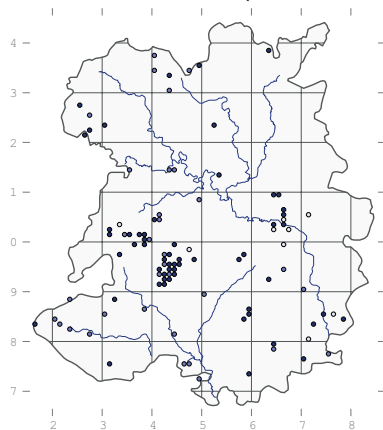


***Rhizomnium punctatum*  
(Hedw.) T.J. Kop.**

**Dotted Thyme-moss**

First record (as *Mnium punctatum*): Williams, c. 1800, 'banks of brooks.'

This large, conspicuous moss is abundant throughout the county in suitable damp habitats on a wide variety of substrates including soil, rock and rotting wood. It has been recorded in M22 *Juncus subnodulosus* at Sweeny Fen (Packham, 1979); M23 *Juncus effusus* in several batches on the Long Mynd (C.M. Owen and R. Tapper, 1983); M35 *Montia fontana* at Lightspout Hollow and Wild Moor (Tapper, 1983); S27 *Comarum palustre* at Bomere Pool (M.J. Wigginton, 1979); and W8 *Fraxinus excelsior* woodland at Limekiln Wood. On Earl's Hill it is 'occasional on the scree slope and rare on fallen and rotten wood in the ash woodland' (R.D. Porley, 1986).



***Rhizomnium pseudopunctatum* (Bruch & Schimp.) T.J. Kop.**

**Felted Thyme-moss**

First records (as *Mnium subglobosum*): R.D. Benson, 1893, 'Wilderley Green and Shipton Fields, Pulverbatch.'

Rather similar to *R. punctatum* but in a narrower range of habitats. It has only been recorded in M23 *Juncus effusus* flushes in Callow Hollow and Jonathan's Hollow (both D.A. Callaghan, 2012), where it was first recorded on the Long Mynd by J.G. Duckett in 1974). It has also been found on Titterstone Clee (firstly by A.W. Weyman, 1893) and Brown Clee (M. Lawley, 2007).

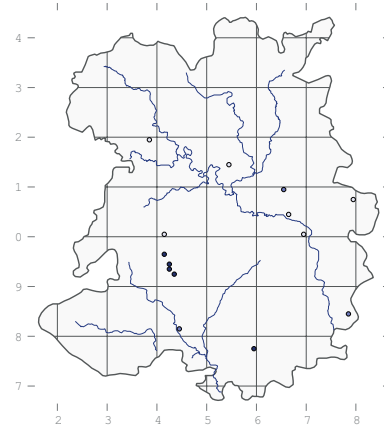
***Plagiomnium cuspidatum*  
(Hedw.) T.J. Kop.**

**Woody Thyme-moss**

First record (as *Bryum cuspidatum*): Williams, c. 1800, 'on walls, ditch banks, etc, common.'

Occasional in woods such as Cox Wood (W.H. Painter, 1906), Limekiln

Wood and Bowhills Dingle (both M.E. Newton, 1970). Also recorded in M36 *Chrysosplenium oppositifolium* springs in Ashes Hollow (D.A. Callaghan, 2012).

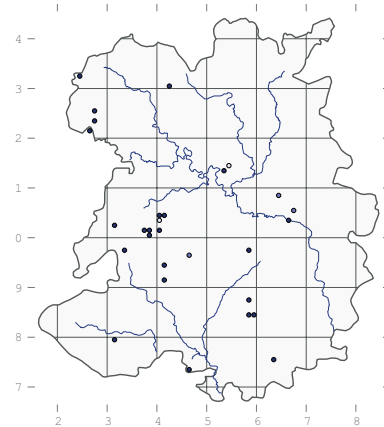


***Plagiomnium affine*  
(Blandow) T.J. Kop.**

**Many-fruited Thyme-moss**

First record (as *Mnium affine*): R.D. Benson, 1893, 'Minton Beach, male flowers only.'

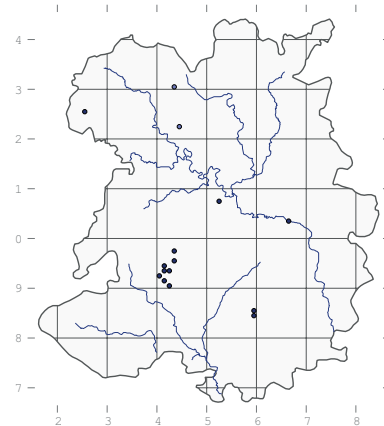
In a variety of damp, habitats, including M22 *Juncus subnodulosus* at Sweeny Fen (A. Hillman, 1992), MG5 *Festuca rubra* on Earl's Hill (F.J. Rumsey, 2004) and oak coppice on Resting Hill (M.E. Newton, 1992).



***Plagiomnium elatum* (Bruch & Schimp.) T.J. Kop.**

**Tall Thyme-moss**

First record: F. Rose, 1959, Fenemere.



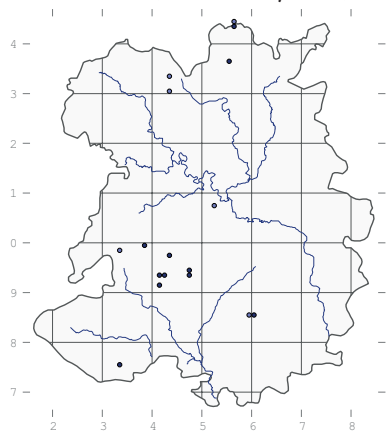
In moist to wet habitats such as marshes and flushes in places like Berrington Pool (C. Walker, 1989), Crose Mere (Sinker, 1960), Ashes Hollow (J.G. Duckett, 1974), Brown Clee (G. Bloom, 1979) and Treflach Marsh (I. Diack, 2011).

## *Plagiomnium ellipticum* (Brid.) T.J.Kop.

### Marsh Thyme-moss

First record: G. Bloom, 1979, Brown Clee.

In M23 *Juncus effusus* on Hope Bowdler (P. Eades, 2010); S27 *Comarum palustre* at Berrington Pool (M.J. Wigginton, 1979); and W5 *Alnus glutinosa* at Cole Mere and Oss Mere (both Wigginton, 1979). It is more common on the hills, but it still occurs in several places on the plain, including at Prees Heath (M.F. Godfrey, 2007).



*Pleurozium schreberi* (Dan Wrench)

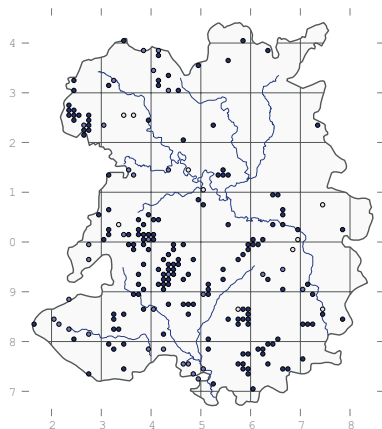


*Hylocomium splendens* (Dan Wrench)

## *Plagiomnium undulatum* (Hedw.) T.J. Kop.

### Hart's-tongue Thyme-moss

First record (as *Mnium undulatum*): Williams, c. 1800, 'in woods and on shady ditch banks.'



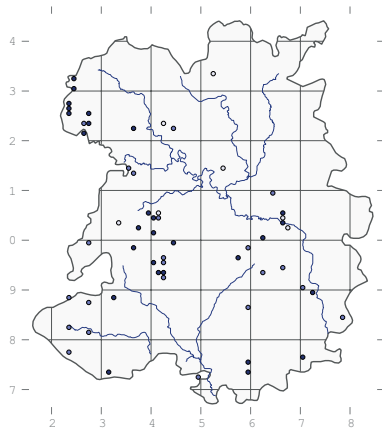
Abundant throughout the county on moist neutral or base-rich soil in both grassland and woodland. In grasslands, it is found in CG2 *Avenula pubescens* on Windmill Hill; MG5 *Festuca rubra* at Morton Pool (C. Walker, 1981), Hayton's Bent (D.H. Wrench, 1995) and elsewhere; M22 *Juncus subnodulosus* at Sweeny Fen (A. Hillman, 1992) and Trefonen Marshes; M23 *Juncus effusus* on Hope Bowdler Hill (P. Eades, 2010); U4 *Agrostis capillaris* on Brown Clee.

In woods, it occurs in W5 *Alnus glutinosa* at Cole Mere and Crose Mere (M.J. Wigginton, 1979); W7 *Lysimachia nemorum* below the Ercall (Trueman 1981); W8 *Fraxinus excelsior* at Bomere Pool, Earl's Hill and many other places; W9 *Sorbus aucuparia* in Betchcott Hollow; and W24 *Rubus fruticosus* at Stevenshill.

## *Plagiomnium rostratum* (Schrad.) T.J. Kop.

### Long-beaked Thyme-moss

First record: R.D. Benson, 1893, 'common.'



On moist, calcareous substrates, sometimes on intermittently submerged rocks and banks by streams. It is recorded in M22 *Juncus subnodulosus*

fen at Sweeny Fen; M23 *Juncus effusus* in Ashes Hollow (C.M. Owen, 1983); M35 *Montia fontana* in Lightspout Hollow and on Wild Moor (both R. Tapper, 1983); and W8 *Fraxinus excelsior* woodland at Blodwel Rock (Trueman, 1981). At Earl's Hill it is 'frequent along paths, on scree slope and cliff face. Occasional on fallen wood and rare on floor in ash woodland' (R.D. Porley, 1986).

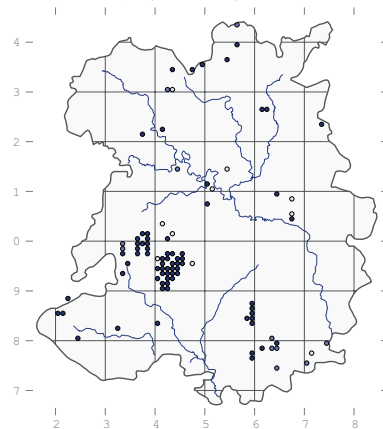
## *Aulacomnium palustre* (Hedw.) Schwaegr.

### Bog Groove-moss

First record (as *Mnium palustre*): Williams, c. 1800, 'bogs, common.'

Fairly common in lowland bogs and upland mires and flushes. Usually associated with *Sphagnum* lawns but occasionally present in other acid, wet habitats. On the hills it is recorded in H12 *Vaccinium myrtillus* heath at Rhos Fiddle; M6 *Carex echinata* in Catbatch (D.A. Callaghan, 2012); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* in Ashes Hollow and Gogbatch (both C.M. Owen, 1983); M35 *Montia fontana* at Carding Mill Valley and Wild Moor (both R. Tapper, 1983); and U5 *Nardus stricta* grassland at Rhos Fiddle.

In the lowlands it grows in M2 *Sphagnum fallax* lawns at Brown Moss (Trueman, 1983), Clarepool Moss, Lin Can Moss and Wem Moss; extending into the M4 *Carex rostrata* lagg at Lin Can Moss; and further into W4c *Betula pubescens* woodland at that site and at Shomere Pool. At Hodnet Heath it is found in M16 *Sphagnum compactum* heath (M.F. Godfrey, 2011); and at Steel Heath it was still present in M25 *Molinia caerulea* mire in a drying peat bog in 2001.



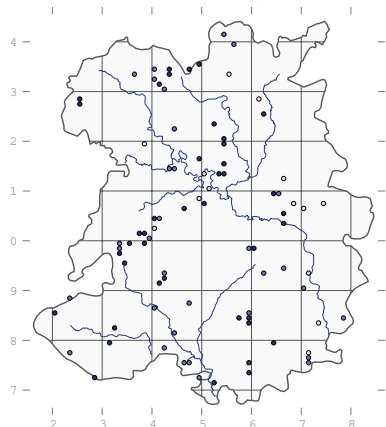
## *Aulacomnium androgynum* (Hedw.) Schwaegr.

### Bud-headed Groove-moss

First record: Hamilton, 1892, 'Huglith Vessons Pool' (SHY).

On dead and rotting wood, noted in particular for its frequent mode of

asexual reproduction by means of gemmae. A typical habitat for it is in W6 *Salix* × *fragilis* woodland, as at Hencott Pool. On Earl's Hill it is described as 'frequent on the scree slope and in hawthorn scrub; occasional on the floor of Oaks Wood' (R.D. Porley, 1986).



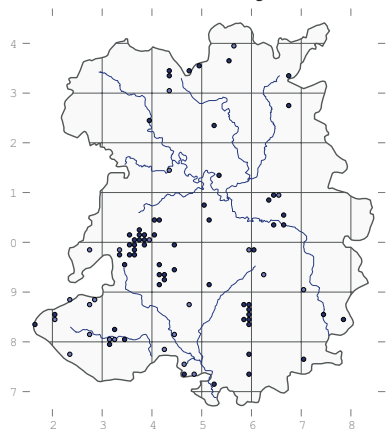
***Orthodontium lineare***  
Schwaegr.

**Cape Thread-moss**

First record: E.F. Warburg, 1957, Brown Moss.

An introduction from the southern hemisphere *O. lineare* was first found in Britain in 1910, hence the rather late date for the first record. It occurs on base-poor substrates such as dry peat, rotting wood, rock outcrops and mine spoil. At Wem Moss it grows in W4 *Betula pubescens* woodland, and at Earl's Hill it is 'occasional on rotten wood in the ash woodland' and, on the Oaks Wood side it is 'rare in hawthorn scrub and on the banks of the Habberley Brook' (R.D. Porley, 1986).

It is well known in many woods in the south of the county (Porley, 1984), on the Long Mynd (first recorded by J.G. Duckett, 1974), the Stiperstones (M.E. Newton, 1992) and on lowland mires such as Whixall Moss (N.G. Hodgetts, 1992).



***Orthodontium gracile***  
(Wilson) Schwägr. ex Bruch & Schimp.

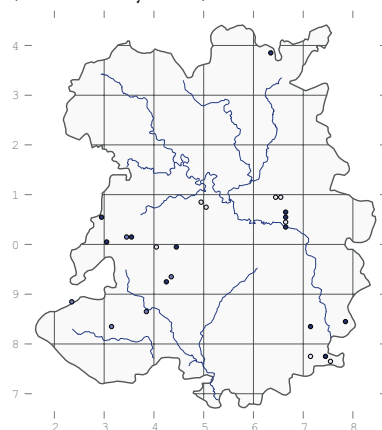
**Slender Thread-moss**

Just one record: at Hermitage Farm, Hodnet (Hamilton, 1892, SHY).

***Hookeria lucens*** (Hedw.) Sm.  
**Shining Hookeria**

First record: Williams, c. 1800, 'on Shomere Moss and Bomere'.

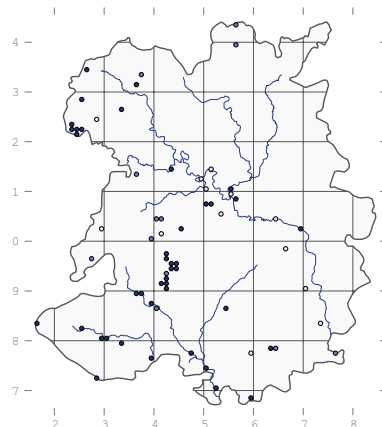
Typical of woodland flushes on a variety of soil types. Good places to look for it include along the Borle Brook at Ray's Bridge, where it grows in W8 *Fraxinus excelsior* woodland, and Hope Coppice, where it is in W10 *Quercus robur* woodland. Other recent sites for it include Tantree Bank (D.H. Wrench, 2007) and Shavington Park (M.F. Godfrey, 2009).



***Fontinalis antipyretica***  
Hedw.

**Greater Water-moss**

First records: Williams, c. 1800, 'brooks and ponds. In Eaton Brook, River Tern, etc'.



In rivers throughout the county, including the Clun (K. Dale, 1989), Onny (G.E. Castle, 1992), Severn (first recorded by W.H. Painter in 1900), Tanat and Teme (N.T.H. Holmes, 1980). It is less common in the meres, but it has been known at Betton Pool since 1979 (M.J. Wigginton), where it occurs in W6 *Salix* × *fragilis* carr

in shallow water and it was once recorded at Oss Mere (Wigginton, 1979). Elsewhere it is quite common in smaller streams and pools, especially in the uplands.

Most plants are presumably var. *antipyretica*, but var. *cymbifolia* W.E. Nicholson, Boat-leaved Water-moss, which is much rarer, has been found in the Teme at Ludlow (F.J. Rumsey, 2005, conf. G.P. Rothero, BBSUK).

***Fontinalis squamosa*** Hedw.  
**Alpine Water-moss**

A plant of fast-flowing, clean rivers. It was collected in the Severn at Highley by J.B. Duncan in 1902 (SHY) and has been reported in the Onny (N.G. Hodgetts, 1994, A.R. Perry, 1995) but without a detailed locality.

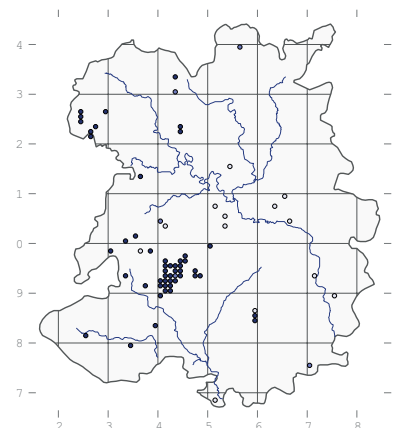
***Climacium dendroides***  
(Hedw.) F. Weber & D. Mohr

**Tree-moss**

First record (as *Hypnum dendroides*): Williams, c. 1800, 'moist pastures about Eaton and Pitchford'.

Often in small quantities in species-rich damp grassland in rather base-rich conditions, such as CG2 *Avenula pubescens* on Moelydd; MG5c *Danthonia decumbens* on Llynclys Hill; M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010); M23 *Juncus effusus* on the Long Mynd (D.A. Callaghan, 2012); and S3 *Carex paniculata* at Fenemere (C. Walker, 1988).

It is well known on the Long Mynd (first recorded by Hamilton in 1893) and Brown Clee (J.B. Duncan, 1904), and it has recently been found on other hills in the south-west, such as Hopesay Hill (R.F. Shoubridge, 1998); but it has been disappearing from around meres such as Brown Moss (last seen by M.E. Newton, 1978), Crose Mere (M.J. Wigginton, 1979) and Cole Mere (Anon., 1992).





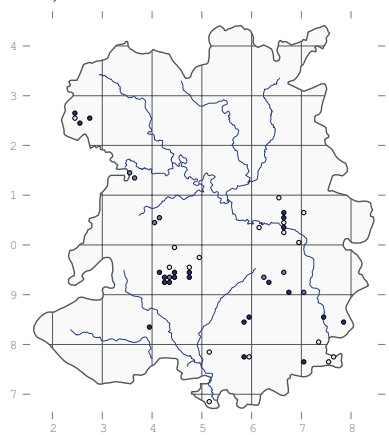
## *Palustriella commutata*

(Hedw.) Ochyra

### Curled Hook-moss

First record (as *Hypnum commutatum*): T. Sawley, 1850 '...may be gathered at the foot of the Moelydd.'

In wet base-rich habitats, where it forms extensive carpets or tufa-forming communities in springs. It has been recorded in M10 *Carex dioica* and M13 *Palustriella commutata* at both Hope Bowdler (P. Eades, 2010) and Trefonen Marshes (M.F. Godfrey, 2011) and in W6 *Salix* × *fragilis* woodland in flushes by the Borle Brook at Defford. Most records of it are from the Long Mynd, where it was first recorded by Hamilton in 1893, the Ironbridge Gorge (R. Anslow, 1870) and the north-west limestone (Salwey, 1850).



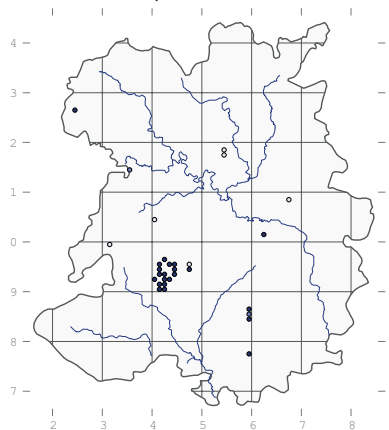
## *Palustriella falcata* (Brid.)

Ochrya

### Claw-leaved Hook-moss

First record (as *Fontinalis falcata*): Williams, c. 1800, 'on Aberly Wood near Sundorn (since enclosed)' and 'Bing's Heath below.'

A tufa-forming moss found in M10 *Carex dioica* on Hope Bowdler Hill (P. Eades, 2010); M13 *Palustriella commutata* at Trefonen Marshes (M.F. Godfrey, 2011); and along a stream in W8 *Fraxinus excelsior* woodland at Whitwell Coppice. The best place to see it is on the Long Mynd, where it was first recorded by R.D. Benson in 1893.



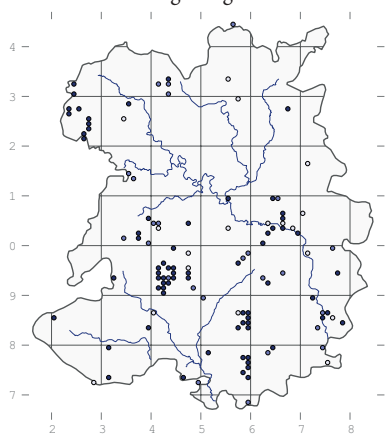
## *Cratoneuron filicinum*

(Hedw.) Spruce

### Fern-leaved Hook-moss

First record (as *Hypnum filicinum*): Williams, c. 1800, 'springs and bogs. On Stevens Hill near Cound, etc.'

Abundant in wet habitats such as base rich springs and flushes, where it has been recorded in M10 *Carex dioica* on Hope Bowdler Hill (P. Eades, 2010); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* at Cole Mere (Wigginton, 1979) and Hope Bowdler (Eades, 2010); OV30 *Bidens tripartita* at White Mere; and in W5 *Alnus glutinosa* woodland at Crose Mere and Oss Mere (the last three by Wigginton, 1979). It is also quite frequent in more "weedy" sites such as wet gravel paths, tracksides and even cattle drinking troughs.

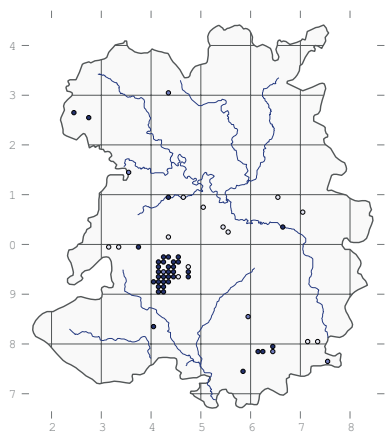


## *Campylium stellatum*

(Hedw.) J. Lange & C.E.O. Jensen

### Yellow Starry Feather-moss

First records (as *Hypnum stellatum*): Williams, c. 1800, 'on Cound Moor and a boggy field adjacent; boggy ground above Golden Pool; at the east end of the Caradoc Hill near the bottom; on Shomere Moss.'



In base-rich mires and flushes such as M10 *Carex dioica* on Hope Bowdler Hill (P. Eades, 2010) and at Trefonen Marshes (M.F. Godfrey, 2011); M13

*Palustriella commutata* on Caer Caradoc (R. Meade, 2010), Hope Bowdler (Eades, 2010) and Trefonen Marshes (Godfrey, 2011); M23 *Juncus effusus* on Hope Bowdler (Eades, 2010) and the Long Mynd (R. Tapper, 1983); M29 *Potamogeton polygonifolius* in Callow Hollow (Tapper, 1983); and M35 *Montia fontana* at Boiling Well and Lightspout Hollow (C.M. Owen & R. Tapper, 1983).

## *Campylium protensum*

(Brid.) Kindb.

### Dull Starry Feather-moss

First record: Hamilton, 1897, Caer Caradoc.

In wet and dry grassland on calcareous soils, mainly in quarries in places like Benthall Edge (Hamilton, 1903, SHY), Wenlock Edge (M.F.V. Corley, 1979), Dolgoch, Shadwell, Craig-llwyn and Carreg-y-big quarries (all M. Lawley, 2006-7). It is also recorded on the base of an oak tree in the Wyre Forest (R.E. Longton, 1959, BIRM) and at Sweeny Fen (Packham, 1979).

## *Campyliadelphus*

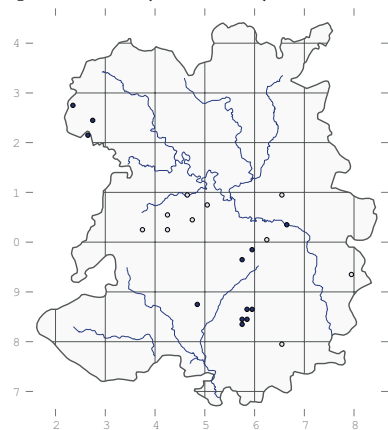
*chrysophyllus* (Brid.) Kanda

### Golden Feather-moss

First record: R. Anslow, 1870, Limekiln wood.

Typical of dry, calcareous grassland in quarries and on disturbed soil. It has been recorded in fields near Oaks Hall (R.D. Benson, 1893) and Shomere (Hamilton, 1893), in an old quarry at Much Wenlock and on the Snailbeach Mineral Railway (both E.B. Benson, 1901, SHY), the Old Potteries Railway at Redhill (Hamilton, 1902), in the lane from Stapleton to Pulverbatch (Hamilton, 1905) and in quarries on Wenlock Edge (M.F.V. Corley, 1979).

More recently it has been recorded in Pattens Rock Quarry (N.G. Hodgetts, 1992), Llanymynech Rocks (J.L. Daniels, 1992) and Dolgoch, Lilleshall and Craig-llwyn quarries in the recent quarries survey (M. Lawley, 2006).



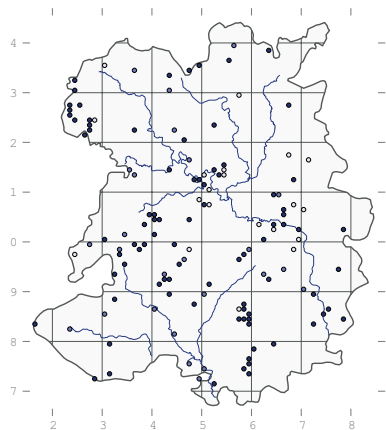
***Amblystegium serpens***

(Hedw.) Schimp

**Creeping Feather-moss**

First record (as *Hypnum serpens*): Williams, c. 1800, 'on rotten wood and banks of brooks and walls, common.'

Most conspicuous as an epiphyte, especially on *Sambucus nigra*, it will also grow on soil and even on some artificial substrates like wall bases and tarmac. At Preston Montford it grows on Elder by the Severn (N.G. Hodgetts, 1984), at Earl's Hill it is 'occasional on soil and trees in the ash woodland' (R.D. Porley, 1986) and at Perkins Beach it is recorded on old mine spoil (M.E. Newton, 1992).

***Amblystegium confervoides***

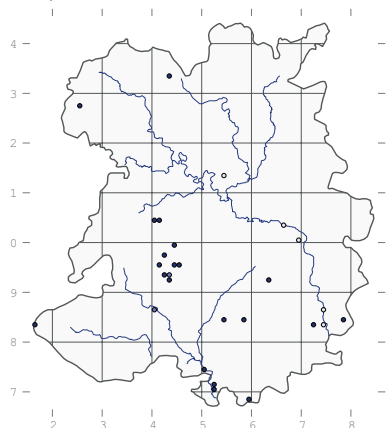
(Brid.) Schimp.

**Tiny Feather-moss**

On limestone on Wenlock Edge (SO602994, M. Lawley, 2001).

***Hygroamblystegium fluviatile*** (Hedw.) Löske**Brook-side Feather-moss**

First record (as *Amblystegium fluviatile*): Hamilton, 1897, 'stone in stream up the valley from All Stretton.'



On rocks in streams and rivers. It is well known in Ashes Hollow, where it was first recorded by J.B. Duncan in 1906, in the Habberley Brook at Earl's Hill (G.G. Graham, 1962), and in various places

along the rivers Teme (N.T.H. Holmes, 1980), Severn (Duncan, 1901), Onny (M.F.V. Corley, 1979) and Morda (C.C. Townsend, 1992).

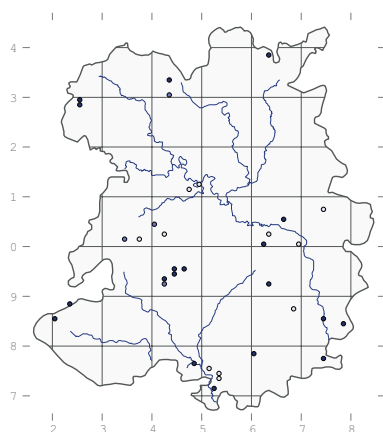
***Hygroamblystegium tenax***

(Hedw.) C.E.O. Jensen

**Fountain Feather-moss**

First records: Hamilton, 1893, 'near Pengwern Boat-house, Radbrook and Lord's Hill.'

On rocks in streams and rivers. Recorded in places like Ashes Hollow (M.O. Hill, 1975), the River Morda at Tyn-y-coed (C.C. Townsend, 1992), and in the brook at Shavington Park (M.F. Godfrey, 2009). Microscopic examination is needed to distinguish it from the previous species, and its habitat is very similar.

***Hygroamblystegium varium*** (Hedw.) Monk**Willow Feather-moss**

First record: J.B. Duncan, 1905, Titterstone Clee.

On Titterstone Clee (J.B. Duncan, 1905), Alkmund Park Pool (M.J. Wigginton, 1979), by the Tern at Attingham Park (N.G. Hodgetts, 1992), Bucknell Wood (R.F. Shoubbridge, 1998), and in Shadwell Quarry (M. Lawley, 2006).

***Leptodictyum riparium***

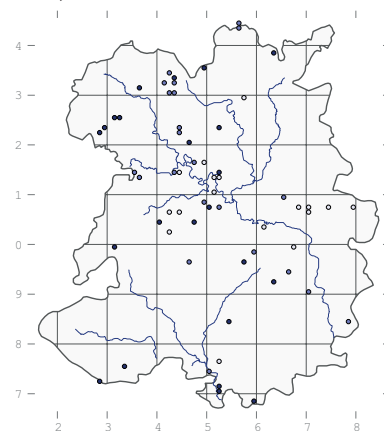
(Hedw.) Warnst.

**Kneiff's Feather-moss**

First record (as *Hypnum riparium*): Williams, c. 1800, 'on stones in brooks and on the banks of brooks, common.'

This rather anonymous looking moss grows in wet places, usually around tree bases and over branches in marshes or otherwise near water. It was recorded by M.J. Wigginton in 1979 in M23 *Juncus effusus* at Cole Mere; OV30 *Bidens tripartita* on the margins of Newton Mere and White Mere; S27 *Comarum palustre* fen at Bomere Pool; and W5 *Alnus glutinosa* woodland

at Cole Mere, Fenemere and Oss Mere. It is also well known along the Montgomery Canal (R.V. Lansdown, 1997) and the Teme around Ludlow and Tenbury Wells (N.T.H. Holmes, 1980).

***Conardia compacta*** (Müll.

Hal.) H. Rob

**Compact Feather-moss**

Recorded by J.B. Duncan at Badger Dingle in 1909 and 1926 and at the River Worfe at Rindleford in 1914. This is a rather small species of calcareous rocks growing in situations where it will get little competition from other plants.

***Drepanocladus polygamus***

(Schimp.) Hedenäs

**Fertile Feather-moss**

Recorded in the vicinity of Bridgnorth (SO79) by M.E. Newton in 1971, and found recently at Loton Park (M. Lawley, 2006) and Shelve Pool (SO332979, I. Diack, det. T.L. Blockeel, 2012).

***Drepanocladus aduncus***

(Hedw.) Warnst.

**Kneiff's Hook-moss**

First record (as *Hypnum aduncum*): R.D. Benson (conf. J.E. Bagnall), 1893, 'marl-pits, Pulverbatch.'

In still waters such as small pools and ditches. At Brown Moss it grows in A2 *Lemna minor* community, and it is recorded in Cole Mere (BBS, 1992), Mere Pool (Hamilton, 1899), Venus Pool (M. Lawley, 2006) and Wem Moss (F. Rose, 1959). In the uplands it is well known on the Long Mynd (firstly by R.D. Benson in 1893) and Titterstone Clee (D.H. Wrench, 2004).

***Sanionia uncinata* (Hedw.)**

Löske

**Sickle-leaved Hook-moss**

First record: R. Anslow, 1870, 'between Wrekin and Little Wenlock.'

In flushes on the Stiperstones (M.E. Newton, 1992), in Ashes Hollow (M.O. Hill, 1975), at Cramer Gutter (N.G. Hodgetts, 2001) and Titterstone Clee (J.B. Duncan, 1910 – D.H. Wrench, 2004); and sometimes in lowland sites such as Shomere Pool (Wrench, 2003).

***Hygrohypnum luridum***

(Hedw.) Jenn.

**Drab Brook-moss**

First record (as *Hypnum palustre*): Williams, c. 1800, 'banks of Eaton Brook, and the pool at Eaton Burnell Park.'

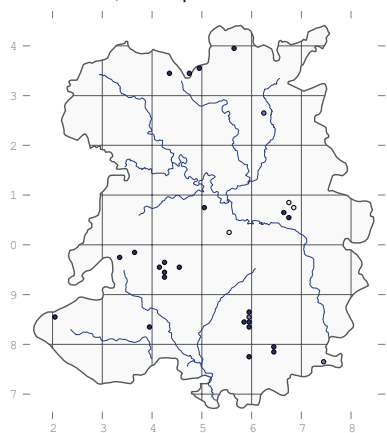
Often a rather robust and conspicuous plant, this species is usually to be found on rock near water. It is well known in Bowhills Dingle (J.B. Duncan, 1903 – M. Lawley, 2003) and Carding Mill Valley (Duncan, 1906 – M.E. Newton, 1994), and it has been recorded recently by the Llangollen Canal at Ellesmere (C.C. Townsend, 1992), on Titterstone Clee (J.D. Sleath, 1999) and at Cole Mere (Lawley, 2005).

***Warnstorfia fluitans* (Hedw.)**

Löske

**Floating Hook-moss**

First records (as *Hypnum fluitans*): Williams, c. 1800, 'on the Brown Clee Hill; Shomere Moss; Cound Moor; and Stiperstones Heath.'



In nutrient-poor, still waters such as S12 *Typha latifolia* swamp at Brown Moss. It is well known on the Long Mynd, where it was first found by J.G. Duckett in 1967, and has been recorded recently at Clarepool Moss (D.H. Wrench, 2008), Coalbrookdale (N.G. Hodgetts, 1992), Cramer Gutter (Hodgetts, 2001), Hopesay Hill (R.F. Shoubridge, 1998), Rhos Fiddle (S. Kingsbury, 1998), Shelve Pool (M. Lawley, 2002), the Stiperstones (Hodgetts, 2002), Stonehill (M.O. Hill,

1992), Titterstone Clee (F. Rose, 1987), Wem Moss (M.E. Newton, 1999) and Whixall Moss (Newton, 1993).

***Sarmentypnum exannulatum* (Schimp.)**

Hedenäs

**Ringless Hook-moss**

First records (as *Hypnum exannulatum*): R.D. Benson: Long Mynd, Stiperstones and Wilderley Green and A.W. Weyman: Titterstone Clee (all 1893).

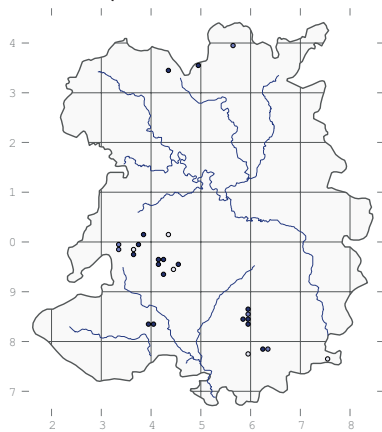
In nutrient-poor, acid water on the hills, typically in M23 *Juncus effusus* and M35 *Montia fontana* on the Long Mynd (D.A. Callaghan, 2012). It was formerly present in the lowlands, as Hamilton showed by extracting it from a peat sample taken from a bog at Weeping Cross (*Record of Bare Facts* 16, 1906). There are recent records for Brown Clee (M. Lawley, 2007), Hopesay Hill (R.F. Shoubridge, 1998), the Long Mynd (M.E. Newton, 1994), Rhos Fiddle (S. Kingsbury, 1998) and Titterstone Clee (D.H. Wrench, 2004).

***Straminergon stramineum* (Dicks ex Brid) Hedenäs**

**Straw Spear-moss**

First record (as *Hypnum stramineum*): R.D. Benson, 1892, Stiperstones (SHY).

In upland flushes such as M23 *Juncus effusus* in Catbatch (D.A. Callaghan, 2012). It is also recorded on Catherton Common (A.R. Perry, 1995), Grit Hill (M.E. Newton, 1979), Hopesay Hill (R.F. Shoubridge 1998), the Stiperstones (Newton, 1992), and in bogs in the lowlands at Clarepool Moss (Whild, 1993) and Whixall Moss (Newton, 1993). It seems to have gone from Brown Moss, where it was last recorded by Newton in 1978.

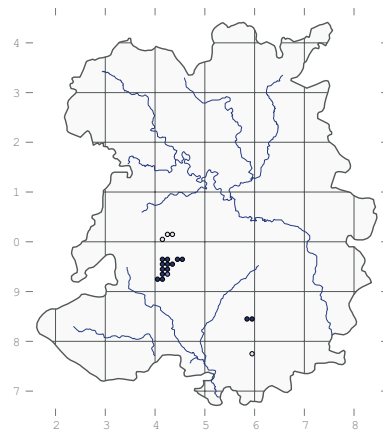


***Hamatocaulis vernicosus* (Mitt.) Hedenäs**

**Slender Green Feather-moss**

First record: R.D. Benson, 1892, 'Shepton Fields' (SHY).

In M23 *Juncus effusus* flushes on the Long Mynd (D.A. Callaghan, 2012), where it was first recorded by J.G. Duckett in 1974. It is also found on Brown Clee (SO589843 & SO591842, D.A. Callaghan, 2014) and in the past it has been recorded at Wilderley Green (Hamilton, 1893), Titterstone Clee (A.W. Weyman, 1893) and Cothecott Hill (Benson, 1893).



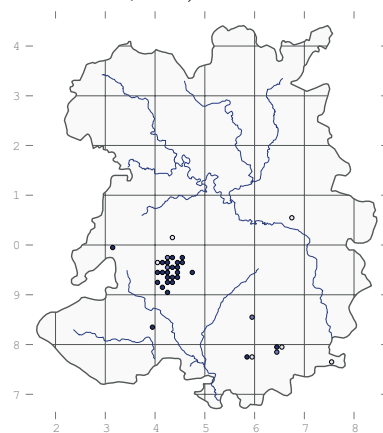
***Scorpidium revolvens* (Sw. ex anon.) Rubers**

**Rusty Hook-moss**

First record (as *Hypnum revolvens*): R.D. Benson, 1892, 'the Longmynd' (SHY).

A large and conspicuous plant of upland flushes, recorded in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010); M23 *Juncus effusus* in various places on the Long Mynd; M29 *Potamogeton polygonifolius* in Callow Hollow; and M35 *Montia fontana* at Boiling Well, Carding Mill Valley, Lightspout Hollow and Wild Moor (all Tapper & C.M. Owen, 1983).

It has also been recorded recently on Brown Clee (G. Bloom, 1979), Catherton Common (C. Walker, 1981), Hopesay Hill (J.A. Lister, 1996), Stapeley Hill (M. Lawley, 1998) and Titterstone Clee (J.B. Duncan, 1901 – A.K. Thorne, 1999).





***Scorpidium cossonii***

(Schimp.) Hedenäs

**Intermediate Hook-moss**First record (as *Hypnum intermedium*): Hamilton, 1892, 'Shepton Fields' (SHY).

Much smaller and more delicate than the previous species, *S. cossonii* also grows in upland flushes and springs such as M23 *Juncus effusus* in Jonathan's Hollow (D.A. Callaghan, 2012). It was until recently considered merely a variety of *S. revolvens*, and it was not until 1999 that it was refound on Titterstone Clee by J.D. Sleath, where it was first recorded by J.B. Duncan in 1910. There are also old records of it on the Long Mynd (R.D. Benson, 1893-97) and Stapeley Hill (Hamilton, 1893).

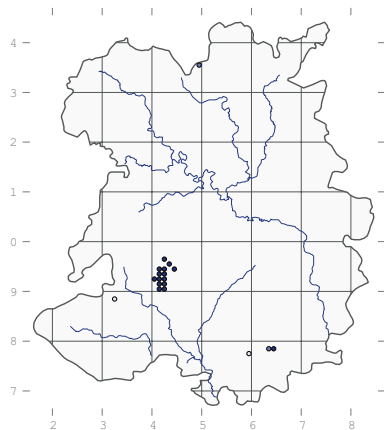
***Scorpidium scorpioides***

(Hedw.) Limpr.

**Hooked Scorpion Moss.**

First record: J.J. Dillenius, 1726, 'near Bishop's Castle and Pentir'.

In mineral-rich flushes on the Long Mynd, where it was first recorded in Minton Batch by R.D. Benson in 1893. There are also records of it on Catherton Common (M. Lawley, 1998), Titterstone Clee (J.B. Duncan, 1907) and Whixall Moss (Sinkler, 1962).

***Calliergon cordifolium***

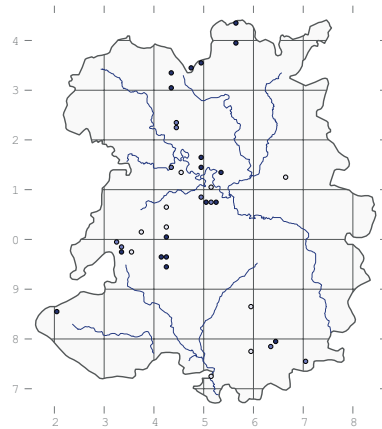
(Hedw.) Kindb.

**Heart-shaped Spear-moss**

First record: R. Anslow, 1870, Leegomery.

A large and conspicuous species, frequently recorded in marshes and wet woods. It has been found in S24 *Calamagrostis canescens* fen at Oss Mere; S27 *Comarum palustre* at Berrington and Bomere pools (all M.J. Wigginton, 1979); W4 *Betula pubescens* woodland at Bomere Pool (Wigginton, 1979) and Haughmond Hill (SJ539139, 2006); and W5 *Alnus glutinosa* at Cole Mere and Fenemere (both Wigginton, 1979).

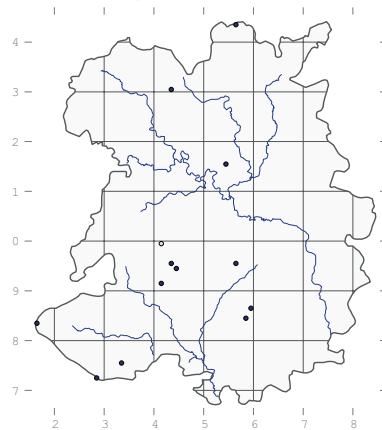
Elsewhere, it is occasional in flushes on the Long Mynd, as at Wildmoor Pool (F.J. Rumsey, 2007), at Cramer Gutter (N.G. Hodgetts, 2001), Haughmond Hill (M.F. Godfrey, 2006) and Rhos Fiddle (S. Kingsbury, 1998).

***Calliergon giganteum***

(Schimp.) Kindb.

**Giant Spear-moss**First record (*Hypnum giganteum*): R.D. Benson, 1893, 'Minton Beach, Marshbrook' (SHY).

In wet woodland such as W5 *Alnus glutinosa* woodland at Oss Mere and Sweat Mere and in upland flushes in places like Minton Batch (R.D. Benson, 1893 – M.E. Newton, 1994). It is rarely fertile but one site where it has been found is Haughmond Abbey Wood (M.F. Godfrey, 2006).

***Leskea polycarpa* Hedw.****Many-fruited Leskea**First records (as *Hypnum medium*): Williams, c. 1800, 'side of Pitchford brook; roots of trees by the side of Eaton Brook'.

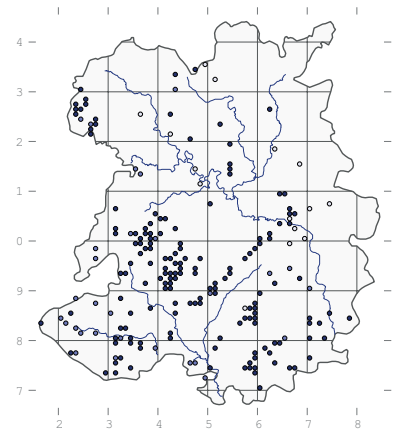
Typically on silt-coated trunks of trees growing in the flood zone of rivers, as by the Tern at Attingham Park (N.G. Hodgetts, 1992) or the Severn at Preston Montford (first recorded by E.F. Warburg in 1957). Elsewhere, it has been recorded in places like Haughmond Hill (M.F. Godfrey, 2006) and Llyncllys Quarry (D.H. Wrench, 2006).

***Thuidium tamariscinum***

(Hedw.) Schimp.

**Common Tamarisk-moss**First record (as *Hypnum proliferum*): Williams, c. 1800, 'woods, common'.

In a range of habitats, including MG5 *Festuca rubra* grassland at Rushbury and Hill Houses (D.H. Wrench, 1994-95); MG9 *Deschampsia cespitosa* in Easthope Wood; M13 *Palustriella commutata* on Hope Bowdler Hill (P. Eades, 2010); and M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983).



In woods, it is found in W5 *Alnus glutinosa* at Haughmond Abbey (J. Mallabar, 1998); W7 *Lysimachia nemorum* at Brook Vessons and Fastings Coppice; W8 *Fraxinus excelsior* at Craig

*Cryphaea heteromalla*  
(Martin Godfrey)*Ctenidium molluscum*  
(Martin Godfrey)

Sychtyn (R.A. Dawes, 2000), Limekiln Wood, the Novers and elsewhere; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Cole Mere and Haughmond Hill; and both W23 *Ulex europaeus* and W24 *Rubus fruticosus* hedgebanks at Mellin-y-Groque.

## ***Thuidium delicatulum*** (Hedw.) Schimp.

### **Delicate Tamarisk-moss**

First record: M.E. Newton, 1994, Minton Batch.

Rather similar to the previous species but more likely to be found in open grassland, it is perhaps best distinguished by microscopic features. It has been recorded recently on Llynclys Hill (M. Lawley, 2003) and in Carreg-y-big and Wern ddu quarries (both Lawley, 2007).

## ***Thuidium assimile*** (Mitt.) A. Jaeger.

### **Philibert's Tamarisk-moss**

At Shadwell Quarry (M. Lawley, 2006) and Loton Park (D.A. Callaghan, 2008). It is very similar to the previous two species and best distinguished using the microscope.

## ***Pseudoscleropodium purum*** (Hedw.) M. Fleisch

### **Neat Feather-moss**

First record (as *Hypnum purum*): Williams, c. 1800, 'woods, hedges and thickets, common.'

Common and abundant throughout the county, this large moss is one of the first species to be learned by the beginner. It has quite a wide range of habitats but is most often found in grassland and on heaths where it tolerates both acid and basic substrates.

This range of habitats is reflected in the NVC communities in which it has been found: CG2 *Avenula pubescens* on Llynclys Hill and Moelydd; CG10 *Helianthemum nummularia* on Llynclys Hill; H8 *Ulex gallii* on Prees Heath; H9 *Deschampsia flexuosa* and H12 *Vaccinium myrtillus* on the Stiperstones; M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* in Gogbatch (C.M. Owen, 1983); MG5 *Festuca rubra* in many places; U1 *Rumex acetosella* at Attingham Park and Prees Heath; U4 *Agrostis capillaris* at Rhos Fiddle; U20 *Pteridium aquilinum* at Gogbatch (Owen, 1982) and on Titterstone Clee (A.K. Thorne, 1999); W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981); W16 *Quercus petraea* at Sowdley Wood; W17 *Leucobryum glaucum* at Vron Wood; and

in a W24 *Rubus fruticosus* hedgebank at Mellin-y-Groque.

## ***Plasteurhynchium striatulum*** (Spruce) M. Fleisch.

### **Lesser Striated Feather-moss**

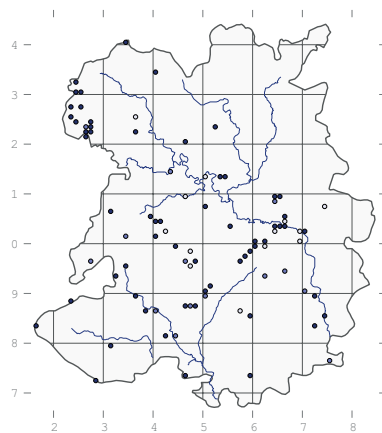
Just one record, at Ippikin's Rock (M. Lawley, 2004, det. S.D.S. Bosanquet, BBSUK). A plant of warm, dry and shaded sites.

## ***Eurhynchium striatum*** (Hedw.) Schimp.

### **Common Striated Feather-moss**

First record (as *Hypnum striatum*): Williams, c. 1800, 'ditch banks, common.'

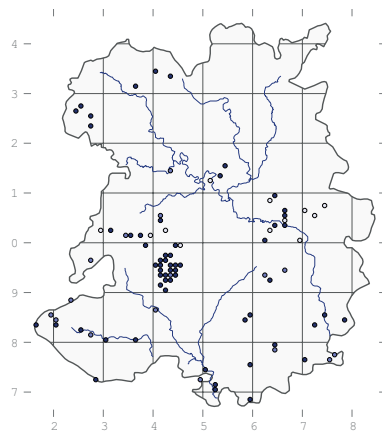
This big, bushy, moss is a conspicuous member of the woodland floor throughout the county, especially where the soil is base-rich. It occurs in W8 *Fraxinus excelsior* woodland at Blodwel Rock (Trueman, 1981), Earl's Hill, Limekiln Wood, Stevenshill and the Novers.



## ***Platyhypnidium riparioides*** (Hedw.) Dixon

### **Long-beaked Water Feather-moss**

First record (*Hypnum ruscifolium*): Williams, c. 1800, 'on stones in brooks, common.'



On rocks and tree roots in watercourses throughout the county, and in W5 *Alnus glutinosa* woodland at Cole Mere

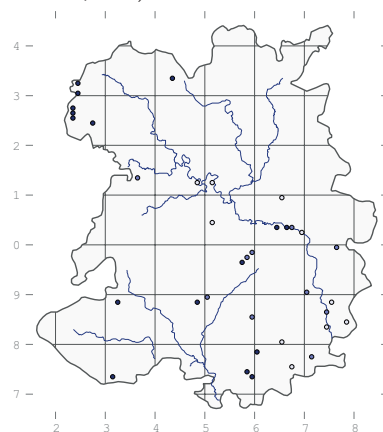
(J. Mallabar, 1998) and Haughmond Abbey. Good places to look for it include in the stream in Ashes Hollow, where it was first recorded by G.G. Graham in 1961; along the Habberley Brook at Earl's Hill (R.D. Benson, 1897); and in the River Teme at Ludlow (N.T.H. Holmes, 1980).

## ***Rhynchostegium murale*** (Hedw.) Schimp.

### **Wall Feather-moss**

First record (as *Eurhynchium murale*): R. Anslow, 1870, Limekiln Wood.

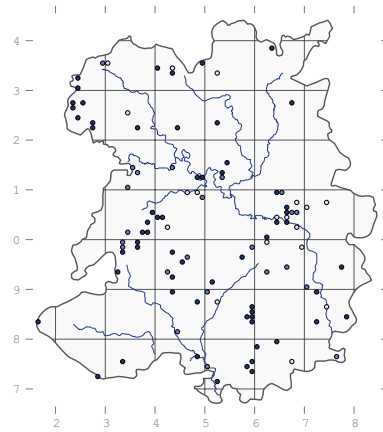
Commonly found on rocks and stones in base-rich habitats such as old quarries on Wenlock Edge (M.F.V. Corley, 1979), Craig-llwyn and the Novers (both M. Lawley, 2006), and on old walls such as the brickwork of the Elan pipeline aqueduct over the Mad Brook at Silligrove (M.C. Clark, 1960, BIRM). More natural sites such as Bowhills Dingle (J.B. Duncan, 1903) seem less common.



## ***Rhynchostegium confertum*** (Dicks.) Schimp.

### **Clustered Feather-moss**

First record: Hamilton, 1893, Pulley.



This species is found throughout Shropshire growing on shaded wood and stones, being particularly common on Elder. It is frequent as a weed of artificial sites such as gardens and churchyards. On Earl's Hill it is 'occasional in ash woodland on tree bases and rare on

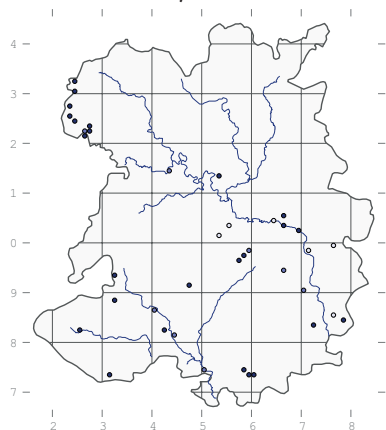
trunks, rare on rock exposures in wet meadow' (R.D. Porley, 1986). Good places to look for it include Benthall Edge, where it was first recorded by M.E. Newton in 1982, and the Quarry, Shrewsbury (Hamilton, 1899).

***Rhynchostegiella tenella***  
(Dicks.) Limpr.

**Tender Feather-moss**

First record (as *Hypnum tenellum*): Williams, c. 1800, 'on the underside of projecting roots and stones at Acton Burnell Hill; on Stevens Hill near Cound.'

On rocks and trees in calcareous woodland, usually W8 *Fraxinus excelsior* woods such as Benthall Edge (first recorded here by Hamilton in 1905) and along the Borle Brook at New England (M.F. Godfrey, 2010) or quarries such as Llanymynech Rocks (J.L. Daniels, 1992) and those along Wenlock Edge (M.F.V. Corley, 1979). Sometimes it is also recorded on walls, as at Ludlow Castle (M.V. Fletcher, 1979) and Newcastle Church (M. Lawley, 1998).



***Rhynchostegiella curviseta***  
(Brid.) Limpr.

**Curve-stalked Feather-moss**

First record: J.B. Duncan, 1908, Hampton Loade (E, SHY).

An uncommon moss of shady stream banks, found by the Borle Brook at Highley (Duncan, 1909), near Claverley (M. Lawley, 2006) and by the Severn at Bewdley (Lawley, 2009).

***Rhynchostegiella teneriffae***  
(Mont.) Dirkse & Bouman

**Teesdale Feather-moss**

First records: J.B. Duncan, 1902, Wyre Forest and Highley.

On wet, base-rich rocks and walls by shady rivers. Among the places it has been recorded are the Severn at Benthall Edge (Hamilton, 1903) and Whithalls Wood (M. Lawley, 2002), along the Habberley Brook at Lyd Hole (Hamilton, 1905) and Earl's Hill

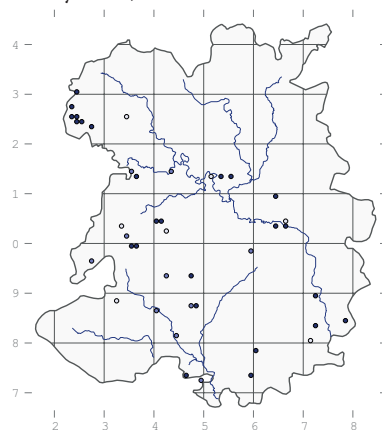
(F. Rose, 1960), and Bowhills Dingle (Duncan, 1905 – Lawley, 2003).

***Cirriphyllum piliferum***  
(Hedw.) Grout

**Hair-pointed Feather-moss**

First record (as *Eurhynchium piliferum*): Hamilton, 1886, Monkmoor.

In CG2 *Avenula pubescens* at Craig Sychtyn and Craig-llwyn Quarry, and frequent on the ground in W8 *Fraxinus excelsior* on Earl's Hill (R.D. Porley, 1986). It is a calcicole, well known in places like Benthall Edge (N.G. Hodgetts, 1992), Llynclys Hill, Moelydd and Wenlock Edge (M.F.V. Corley, 1979).

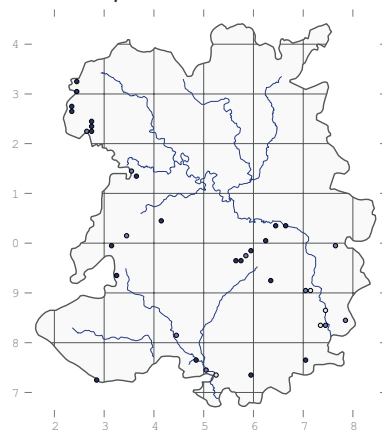


***Cirriphyllum crassinervium*** (Taylor) Loesk.  
& M. Fleisch.

**Beech Feather-moss**

First records (as *Eurhynchium crassinervium*): A.W. Weyman, 1893, Whitcliffe Wood and Steventon.

On trees and on the ground in base-rich sites, often by rivers in woods. At Earl's Hill it is 'occasional on the banks of the Habberley Brook, rare on tree bases in ash woodland and scree slope' (R.D. Porley, 1986). Good places to see it include Llynclys Hill (M. Lawley, 2003), Ludlow Castle (R.D. Benson, 1899 – M.V. Fletcher, 1979) and Wenlock Edge, where it was first recorded by J.B. Duncan in 1913.



***Oxyrrhynchium pumilum***  
(Wilson) Löske

**Dwarf Feather-moss**

First record (as *Eurhynchium pumilum*): Hamilton, 1886, Shelton Rough.

Typically found growing on the ground, often in deep shade and usually on base-rich soils. Good places to look for it include Benthall Edge (first recorded by J.W. Bates, 1992), Earl's Hill (J.G. Duckett, 1975) and Wenlock Edge (J.B. Duncan, 1913).

***Oxyrrhynchium hians***  
(Hedw.) Löske

**Swartz's Feather-moss**

First records (as *Eurhynchium Swartzii*): Hamilton: Redhill, Radbrook and Meole; and A.W. Weyman: Whitcliffe Wood and Hope Gutter (all 1893).

In a wide variety of habitats including woods, hedge banks, ditches, grassland, fields and gardens. Good places to look for it include Benthall Edge (where it was first recorded by W.H. Painter in 1897), Earl's Hill (F. Rose, 1960) and Preston Montford (E.F. Warburg, 1957).

***Oxyrrhynchium schleicheri***  
(R. Hedw.) Röhl

**Twist-tip Feather-moss**

First record (as *Eurhynchium abbreviatum*): J.B. Duncan, 1910, 'Hampton Loade dingle' (SHY).

Generally in woods by streams, as with Duncan's records for Doggett's Batch and Dudmaston (1914). There are also records for Preston Montford (E.F. Warburg, 1957), Coalport (BBS, 1992), Harton Hollow (A.R. Perry, 1995) and the Novers (M. Lawley, 2006).

***Oxyrrhynchium speciosum***  
(Brid.) Warnst.

**Showy Feather-moss**

First record (as *Eurhynchium speciosum*): Hamilton, 1899, Prees Pool, Lacon.

Apparently restricted to fens and wet woods around the meres and mosses. It has been recorded in M22 *Juncus subnodulosus* at Crose Mere and W5 *Alnus glutinosa* woodland at Fenemere and Oss Mere (all M.J. Wigginton, 1979). It was also recorded at St Winifred's Well, Woolston by Hamilton in 1901 (SHY).



## *Kindbergia praelonga*

(Hedw.) Ochyra

### Common Feather-moss

First record (as *Eurhynchium praelongum* var. *stokesii*): Hamilton, 1891, 'Smethcote Falls.'

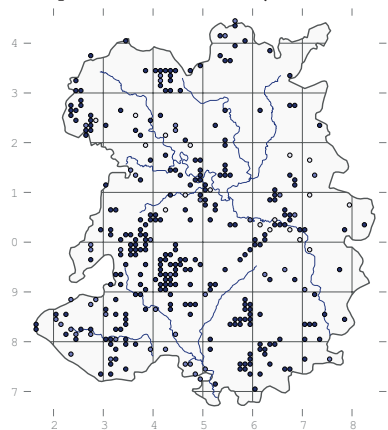
A common plant in a wide variety of habitats – doubtless over-recorded for a number of similar species, but very widespread nevertheless. It has been reported in MG1 *Arrhenatherum elatius* grassland at Preston Montford (S.T. Geikie, 2008); MG5 *Festuca rubra* in many sites, including Clee St Margaret, Hayton's Bent (both D.H. Wrench, 1995) and Cole Mere; M13 *Palustriella commutata* on Hope Bowdler Hill (P. Eades, 2010); M22 *Juncus subnodulosus* at Sweeny Fen (A. Hillman, 1992) and Trefonen Marshes; M23 *J. effusus* at Cramer Gutter, Gogbatch (C.M. Owen) and elsewhere; M24 *Cirsium dissectum* at Cole Mere; M27 *Filipendula ulmaria* at the Mere; M36 *Chrysosplenium oppositifolium* at Poles Coppice; and U20 *Pteridium aquilinum* grassland at Perkins Beach.

On the margins of the meres it is found in OV30 *Bidens tripartita* vegetation at Marton Pool, Chirbury (M.J. Wigginton, 1979); S3 *Carex paniculata* swamp at Sweat Mere (B.D. Wheeler, 1986); and S27 *Comarum palustre* at Berrington, Bomere and Shomere pools (all Wigginton, 1979).



*Rhytidiadelphus triquetrus*  
(Martin Godfrey)

It is, however, most common in woods, being recorded in W4 *Betula pubescens* at Calcot Moss, Haughmond Hill and Lin Can Moss; W5 *Alnus glutinosa* in many places; W6 *Salix* × *fragilis* at Cole Mere, Hencott Pool, Morton Pool and Marton Pool, Chirbury; W7 *Lysimachia nemorum* at the Ercall (Trueman, 1981) and Fastings Coppice; W8 *Fraxinus excelsior* throughout; W9 *Sorbus aucuparia* at Betchcott Hollow; W10 *Quercus robur* at Cole Mere, Haughmond Hill and elsewhere; and in W16 *Q. petraea* at Clarepool Moss and Sowdley Wood.



## *Sciuro-hypnum populeum*

(Hedw.) Ignatov & Huttunen

### Matted Feather-moss

First record (as *Brachythecium populeum*): Hamilton, 1887, Church Stretton.

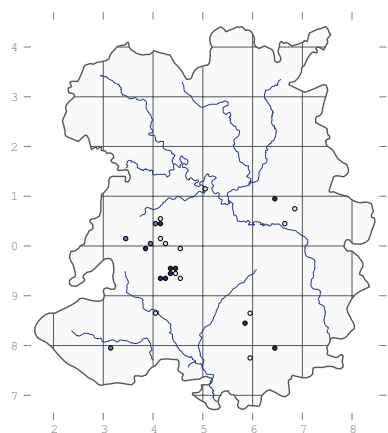
Typically in woods on neutral to base-rich soils, in places like Craig Sychtyn (M. Lawley, 2002), Earl's Hill (N.G. Hodgetts, 2007) and Wenlock Edge (M.F.V. Corley, 1979).

## *Sciuro-hypnum plumosum*

(Hedw.) Ignatov & Huttunen

### Rusty Feather-moss

First record (as *Hypnum plumosum*): Williams, c. 1800, 'on walls and trunks of trees.'



Usually found close to flowing water on rocks and around the bases of trees. At Earl's Hill it is 'rare on the banks of the Habberley Brook' (R.D. Porley, 1986),

and it has been recorded in Cothercott Dingle (R.D. Benson, 1893), Lyd Hole (Hamilton, 1894, SHY) and in the batches on the Long Mynd (M.E. Newton, 1994).

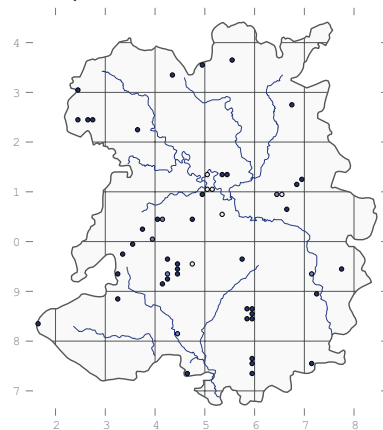
## *Brachythecium albicans*

(Hedw.) Schimp.

### Whitish Feather-moss

First record (as *Hypnum albicans*): Williams, c. 1800, 'on sandy banks about Eaton and on Haghmon Hill.'

Typically of short grassland and bare ground in places like Earl's Hill, where it occurs in 'acidic hill grassland, rare on the east side, occasional on the west and the ridge. Rare on paths' (R.D. Porley, 1986). Hamilton (1901) reported that on Sharpstones Hill 'large expanses on the turf were rendered bright green in October by the fresh growing of this moss.' This suggests that it occurs in U1 *Rumex acetosella* grassland but there are no quadrats to support that yet. It is also recorded in sand quarries, as at Stapleton (R.D. Benson, 1897) and Hilton (M. Lawley, 2006) and in mine spoil at Tankerville (M.E. Newton, 1992) and Ketley (P.S. Gateley, 2003).



## *Brachythecium glareosum*

(Bruch ex Spruce) Schimp.

### Streaky Feather-moss

First records: A.W. Weyman, 1893, near Lady Halton and Hope Gutter.

In dry, calcareous grassland in places like Benthall Edge (J.B. Duncan, 1913), Llynclys Quarry (D.H. Wrench, 1995), quarries on Wenlock Edge (M.F.V. Corley, 1979) and Wern ddu Quarry (M. Lawley, 2007). There are also records of it in what were presumably fields at Berrington and Fox Farm (M.J. Wigginton, 1979 and 1981).

***Brachythecium salebrosum***

(Hoffm. ex F. Weber & D. Mohr)  
Schimp.

**Smooth-stalked Feather-moss**

First record (as *Hypnum salbrosium*):  
Williams, c. 1800, 'on dead wood and  
trunks of trees in shady places.'

On rotting trees in damp woods. There  
are recent records from Blists Hill  
(SJ694031, M.O. Hill, 1989, conf. T.L.  
Blockeel, BBSUK), Bury Ditches (R.F.  
Shoubridge, 1998), Ashford Bowdler  
(M. Lawley, 2001) and Cole Mere  
(Lawley, 2005).

***Brachythecium mildeanum***

(Schimp.) Schimp.

**Sand Feather-moss**

First record: T. Laffin, 1946, 'marsh near  
Cwnd House' (det. M.O. Hill, CGE).

Typically a weed of car park edges  
and gravelly tracks. Recorded at Prees  
Heath, in a car park at Whixall Moss,  
Shavington Park (all M.F. Godfrey,  
2007-09), Haughmond Hill (M.O. Hill,  
2012) and Granville Country Park (M.  
Lawley, 2012).

***Brachythecium rutabulum***

(Hedw.) Schimp.

**Rough-stalked Feather-moss**

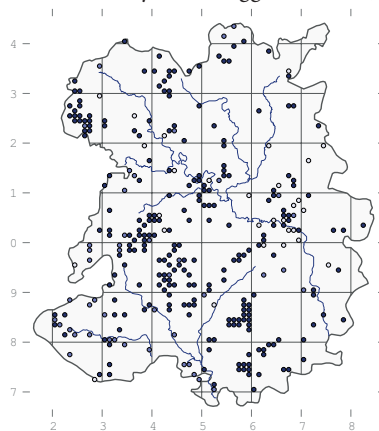
First record (as *Hypnum rutabulum*):  
Williams, c. 1800, 'roots of trees, hedges,  
pastures and walls, common.'

In a wide variety of habitats including  
various types of grassland and  
pasture: CG2 *Avenula pubescens* on  
Moelydd; CG3 *Bromopsis erecta* at  
Stretton Westwood (D.H. Wrench,  
1995); MG1 *Arrhenatherum elatius* at  
Preston Montford (S.T. Geikie, 2008)  
and Ropewalk Meadow; MG5 *Festuca  
rubra* in many places, including Clee St  
Margaret (Wrench, 2005) and Windmill  
Hill; MG6 *Cynosurus cristatus* in Becks  
Field and Meverley Farm; MG8 *Caltha  
palustris* at Crose Mere and Ruewood;  
M22 *Juncus subnodulosus* at Sweeny  
Fen and Trefonen Marshes; M23 *Juncus  
effusus* at Cramer Gutter, Gogbatch  
(C.M. Owen, 1983) and Hope Bowdler  
(P. Eades, 2010); U1 *Rumex acetosella* at  
Ryton Church and on the Long Mynd;  
and U4 *Agrostis capillaris* on Brown  
Clee.

It is also common in woods such as W4  
*Alnus glutinosa* at Lin Can Moss; W5  
*A. glutinosa* at Cole Mere, Morton Pool  
and Sweat Mere; W6 *Salix × fragilis*  
by the Severn in Shrewsbury; W7  
*Lysimachia nemorum* at Brook Vessons  
and the Ercall (Trueman, 1981); W8

*Fraxinus excelsior* in many places; W9  
*Sorbus aucuparia* in Betchcott Hollow;  
W10 *Quercus robur* at Cole Mere,  
Wenlock Edge, etc; W16 *Q. petraea* on  
the Ercall; W21 *Crataegus monogyna*  
scrub on Earl's Hill; W24 *Rubus  
fruticosus* at Stevenshill; and in shady  
M36 *Chrysosplenium oppositifolium* at  
Poles Coppice.

Elsewhere, it crops up in towns in  
places like OV20 *Sagina procumbens*  
on walls in Shrewsbury; S24  
*Calamagrostis canescens* at Fenemere;  
and S26 *Phragmites australis* at Marton  
Pool, Chirbury (M.J. Wigginton, 1979).

***Brachythecium rivulare***

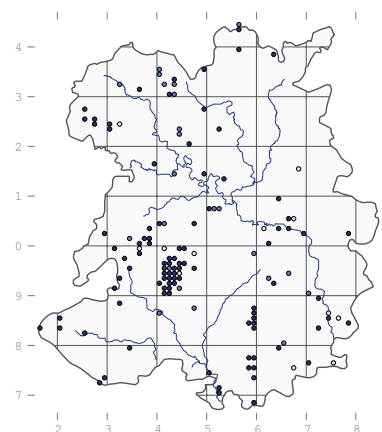
Schimp.

**River Feather-moss**

First record: Hamilton, 1890, 'Church  
Stretton' (SHY).

In wet habitats, typically on rocks by  
streams, in marshes and also in wet  
woods. It is recorded in MG5 *Festuca  
rubra* at Morton Pool (C. Walker, 1981);  
MG8 *Caltha palustris* at Crose Mere,  
Morton Pool and Ruewood Pastures;  
M22 *Juncus subnodulosus* at Crose Mere  
(M.J. Wigginton, 1979) and Sweeny  
Fen; M23 *Juncus effusus* at Cole Mere  
(Wigginton, 1979), Ruewood (P. Welsh,  
1981) and on the Long Mynd (D.A.  
Callaghan, 2012); M35 *Montia fontana*  
on Caer Caradoc (R. Meade, 2010) and  
Carding Mill Valley (R. Tapper, 1983);  
and M36 *Chrysosplenium oppositifolium*  
springs in Ashes Hollow (D.A.  
Callaghan, 2012).

In swamps, it is found in S12  
*Typha latifolia* at Brown Moss and  
Shrawardine Pool; S14 *Sparganium  
erectum* at Betton Pool and S24  
*Calamagrostis canescens* at Fenemere  
(both Wigginton, 1979). It is present  
in many stands of W5 *Alnus glutinosa*  
woodland, as at Cole Mere and Sweat  
Mere (Wigginton, 1979); W6 *Salix ×  
fragilis* at the Mere (Wigginton, 1979);  
and W7 *Lysimachia nemorum* below  
the Ercall (Trueman, 1981).

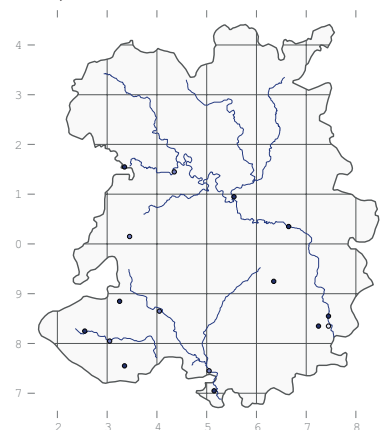
***Scleropodium cespitans***

(Wilson ex Müll.Hal.) L.F. Koch

**Tufted Feather-moss**

First record (as *Brachythecium  
caespitosum*): J.B. Duncan, 1902, River  
Severn at Highley (SHY).

Mostly on rocks by rivers such as  
the Severn at Benthall Edge (J.W.  
Bates, 1992) and Crew Green (M.E.  
Newton, 1997), the Teme at Ludlow  
(C.H. Binstead, 1937) and Ashford  
Bowdler (M. Lawley, 2002), and the  
Tern at Attingham (N.G. Hodgetts,  
1992). It also grows on concrete and  
tarmac away from rivers and has  
been recorded at Bishops Castle and  
Newcastle churches (Lawley, 1998-  
2001).

***Scleropodium tourettii***

(Brid.) L.F. Koch

**Glass-wort Feather-moss**

First record (as *Hypnum illecebrum*):  
Williams, c. 1800, 'on the rocky bank of the  
Cound Brook by a cottage about 150 yards  
below Cound Paper Mill.'

'In a sandstone cutting by the road to  
Nesscliffe' (R.D. Benson, 1898, SHY),  
on sandstone near Bridgnorth (J.B.  
Duncan, 1914), on a rock ledge in a  
disused quarry at Rock of Woolbury  
(A.R. Perry, 1995, NMW) (first  
recorded here by Duncan in 1913) and  
at Goat Hill (M. Lawley, 2011).

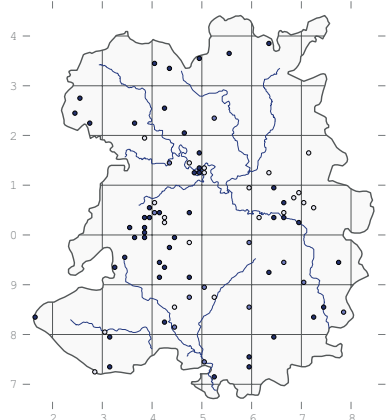


***Brachytheciastrum velutinum* (Hedw.) Ignatov & Huttunen**

**Velvet Feather-moss**

First record (as *Hypnum velutinum*): Williams, c. 1800, 'roots of trees, common.'

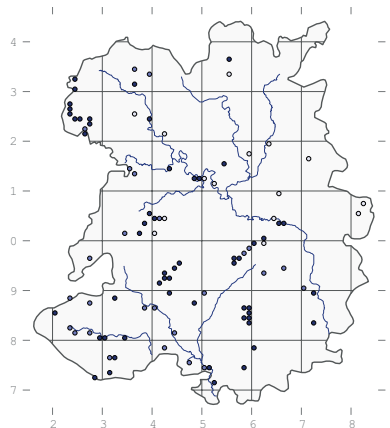
Often encountered as a garden weed growing over old, shaded, brickwork, and also on wood and compacted soil. In Shrewsbury it grows in OV20 *Sagina procumbens* on walls and pavements (M.F. Godfrey, 2011). At Earl's Hill it is 'most characteristic of the continuous hawthorn scrub, but also on floor on either side of the [Habberley] brook.' The scrub in question is W21 *Crataegus monogyna* scrub, but it succeeds almost immediately to W8 *Fraxinus excelsior* woodland, as it is adjacent to the ancient woodland. At Cole Mere it was described as 'forming an adherent mat on the bark of an old fallen tree on the woody slope fringing Cole Mere' (E.A. Wilson, 1950).



***Homalothecium sericeum* (Hedw.) Schimp.**

**Silky Wall Feather-moss**

First record (as *Hypnum sericeum*): Williams, c. 1800, 'on walls and trunks of trees, common.'



Native on limestone rock outcrops in grassland such as CG2 *Avenula pubescens* at Llanymynech Rocks and Jones's Rough; and CG3 *Bromopsis erecta* at Ippikin's Rock, but also found on walls elsewhere. At Earl's Hill it is

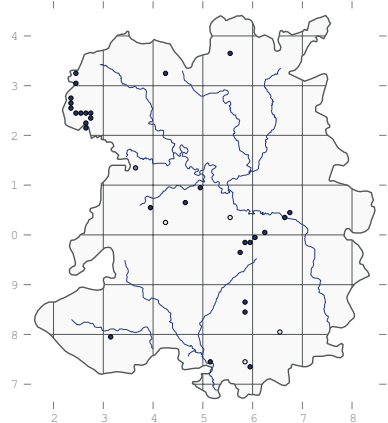
'found widely on rock, living and dead wood. Most characteristic of the cliff face, where in some place it is abundant' (R.D. Porley, 1986) whereas it was found on a wall on the roadside by Frankton Railway Station by E.A. Wilson in 1949, and it was on the roof of Whitehall in Shrewsbury in 1886 (Hamilton, SHY).

***Homalothecium lutescens* (Hedw.) H. Rob.**

**Fellow Feather-moss**

First record (as *Hypnum lutescens*): Williams, c. 1800, 'on Stevens Hill near Cound.'

Restricted to calcareous grassland, often in old limestone quarries. It occurs in CG2 *Avenula pubescens* at Dolgoch Quarry, Jones's Rough and Windmill Hill; CG3 *Bromopsis erecta* in Lea Quarry; and CG7 *Thymus polytrichus* on cliffs and rock outcrops on Wenlock Edge at Presthope. Other places for it include Alberbury Quarry (M.E. Newton, 1980), Llanymynech Hill (Sinker, 1960), by the Teme at Ludlow (N.G. Hodgetts, 1988) and Wood Lane Gravel Pit (D.H. Wrench, 2007).



***Myrinia pulvinata* (Wahlenb.) Schimp.**

**Flood-moss**

First record: M.E. Newton, 1984, Eaton Brook at Eaton-under-Heywood.

On the silty roots of trees in the flood zone on river banks. It was also recorded by the Tern at Tern Bridge and by the Severn at Uffington by N.G. Hodgetts in 1992.

***Campylophyllum calcareum* (Crundw. & Nyholm) Hedenäs**

**Chalk Feather-moss**

First record (as *Hypnum Somerfeldii*): A.W. Weyman, 1893, 'near Ludlow.'

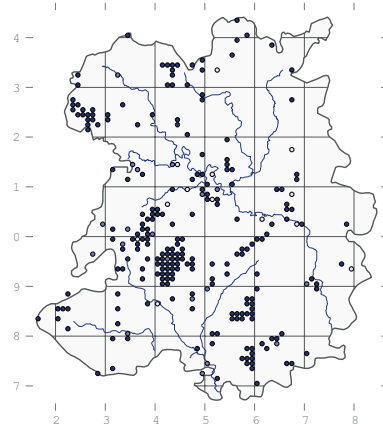
On natural limestone exposures and abandoned quarries such as Pattens Rock Quarry on Benthall Edge (J.W.

Bates, 1992), Craig Sychtyn, Jones's Rough and Pant quarries (all M. Lawley, 2000-07).

***Calliergonella cuspidata* (Hedw.) Löske**

**Pointed Spear-moss**

First record (as *Hypnum cuspidatum*): Williams, c.1800, 'bogs, common.'



Common in a variety of wetlands, from slightly acid to strongly calcareous and from full sunshine to light shade. In grassland it is found in CG2 *Avenula pubescens* on Llynclys and Windmill hills; CG3 *Bromopsis erecta* at Hilltop Meadow (D.H. Wrench, 1994) and Lea Quarry; CG7 *Thymus polytrichus* in Lilleshall Quarry; in many stands of MG5 *Festuca rubra* throughout; MG8 *Caltha palustris* at Crose Mere, Morton Pool and Ruewood; MG10 *Holcus lanatus* at Ruewood; U1 *Rumex acetosella* in Lilleshall Quarry; and in U5 *Nardus stricta* at Rhos Fiddle.

In mires it is recorded in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010), Hope Bowdler (Eades, 2010) and Trefonen Marshes; M22 *Juncus subnodulosus* Crose Mere, Sweeny Fen and Trefonen Marshes; M23 *J. effusus* in flushes on the Long Mynd, the Stiperstones and around many meres; M24 *Cirsium dissectum* at Cole Mere; M29 *Potamogeton polygonifolius* in Callow Hollow (Tapper, 1983); M35 *Montia fontana* in several places on the Long Mynd (Tapper & Owen, 1983) and on Caer Caradoc (Meade, 2010); M36 *Chrysosplenium oppositifolium* at Poles Coppice; OV30 *Bidens tripartita* on the margins of Marton Pool, Chirbury (M.J. Wigginton, 1979); S3 *Carex paniculata* swamp at Fenemere (C. Walker, 1988); S12 *Typha latifolia* at the Long Bog; S24 *Calamagrostis canescens* at Fenemere; and S27 *Comarum palustre* at Bomere and Shomere pools (both Wigginton, 1979).



Finally, in woods it has been found in W4 *Betula pubescens* on Haughmond Hill; W5 *Alnus glutinosa* at Brownheath Moss, Cole Mere, Fenemere and elsewhere; W7 *Lysimachia nemorum* at Brook Vessons; W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981), Llynclys Hill and Earl's Hill; and W9 *Sorbus aucuparia* in Betchcott Hollow.

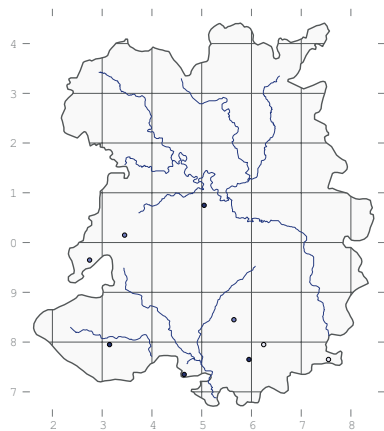
### *Calliergonella lindbergii*

(Mitt.) Hedenäs

#### Lindberg's Plait-moss

First record (as *Hypnum patientiae*): J.B. Duncan, 1901, Wyre Forest. SHY.

On damp, light, calcareous grassland and by tracks and streams. It bears a remarkable resemblance to a *Hypnum* species, and until very recently was included in that genus. It has been recorded at scattered locations such as Marrington Dingle (M.E. Newton, 1980), Clee St Margaret (M.J. Wigginton, 1981), Rock of Woolbury (A.R. Perry, 1995) and Titterstone Clee (D.H. Wrench, 2004).



### *Taxiphyllum wissgrillii*

(Garov.) Wijk & Marg.

#### Depressed Feather-moss

First record: R.D. Benson, 1897, Lyd Hole.

This moss is almost a calcicole version of *Pseudotaxiphyllum elegans* looking rather similar and growing in similar but calcareous habitats. It is mostly recorded in wooded valleys as at Hampton Loade (J.B. Duncan, 1906), Earl's Hill (F. Rose, 1960) and Tick Wood (M.E. Newton, 1994), and sometimes in quarries such as Lilleshall Quarry (M. Lawley, 2006).

### *Pylaisia polyantha* (Hedw.)

Schimp.

#### Many-flowered Leskea

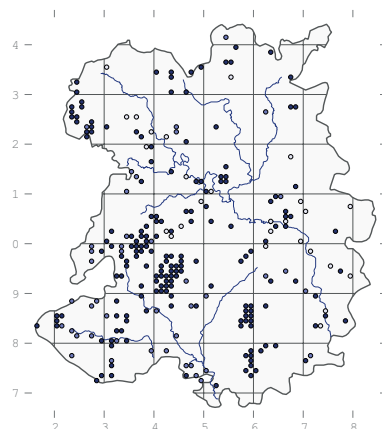
Recorded at Ironbridge and Much Wenlock by F.E. Milsom in 1939 and on an Elder in a hedgerow at Cefn Einion (SO282866) by M. Lawley in 2009.

### *Hypnum cupressiforme*

Hedw.

#### Cypress-leaved Plait-moss

First record: Williams, c. 1800, 'Roots of trees and on rocks.'



Common throughout on trees, logs, rocks, roofs, etc, sometimes in rather exposed conditions such as the corrugated roof of Willey village hall, which it completely covers to a depth of about 5 cm.

It must be noted, however, that many members of this genus are very similar in appearance, and in the past several taxa that are now species were considered merely varieties, so for NVC purposes *H. cupressiforme* agg. is often as good as it gets.

In grassland it is recorded in CG2 *Avenula pubescens* on Moelydd; CG3 *Bromopsis erecta* in Lilleshall Quarry (D.H. Wrench, 2011); CG7 *Thymus polytrichus* on Moelydd; U1 *Rumex acetosella* on Earl's Hill (A.K. Thorne), Haughmond Hill, Prees Heath, etc; U4 *Agrostis capillaris* at Rhos Fiddle; and U5 *Nardus stricta* at Rhos Fiddle; the Stiperstones and Titterstone Clee (Thorne, 1999).

In heaths it is found in H8 *Ulex gallii* at Cramer Gutter and the Stiperstones; H9 *Deschampsia flexuosa* on the Long Mynd and the Stiperstones; H12 *Vaccinium myrtillus* on the Long Mynd (C.M. Owen, 1983), Rhos Fiddle, the Stiperstones; and M25 *Molinia caerulea* at Steel Heath. It is also common in woods, being recorded in W4 *Betula pubescens* at Lin Can and Wem mosses; W5 *Alnus glutinosa* at Brownheath Moss, Sweat Mere (J. Mallabar, 1998) and elsewhere; W6 *Salix × fragilis* at Cole Mere; W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981) and Earl's Hill; W10 *Quercus robur* in Haughmond Abbey Wood (Wrench, 2006); W16 *Q. petraea* at Clarepool Moss, Sowdley Wood and the Ercall; W17 *Leucobryum glaucum* at Oaks Wood; and W24 *Rubus fruticosus* at Stevenshill.

The variety *H. cupressiforme* var. *lacunosum* Brid., Great Plait-moss, has brightly orange-brown coloured shoots and is a familiar sight on rocks and walls in moderately calcareous areas. It was first recorded by Hamilton in 1893 at Grinshill.

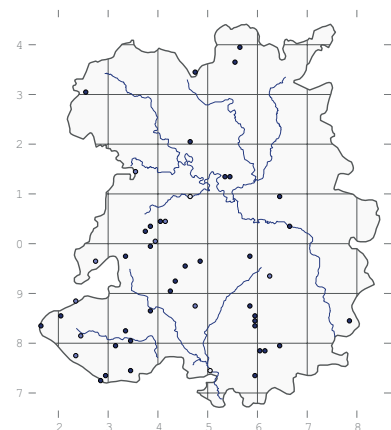
The variety *H. cupressiforme* var. *resupinatum* (Taylor) Schimp., Supine Plait-moss, is quite common as an epiphyte (often on oak) and on circum-neutral rocks. It was first recorded (as *Hypnum polyanthus*) by Williams in about 1800, on 'roots of trees.'

### *Hypnum andoi* A.J.E. Smith

#### Mammillate Plait-moss

First record (as *H. cupressiforme* var. *filiforme*): R.D. Benson, 1893, Oaks Wood.

Difficult to distinguish from *H. cupressiforme*; at one time they were thought to have different growth forms but it is now realised that the two species intergrade and there is still ongoing research to help resolve the situation. The plant is commonly recorded as an epiphyte in Shropshire but it should be identified with caution.

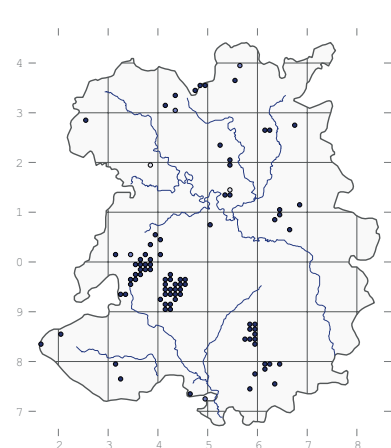


### *Hypnum jutlandicum*

Holmen & Warncke

#### Heath Plait-moss

First record (as *Hypnum cupressiforme* var. *ericetorum*): R. Anslow, 1870, The Wrekin.



This pale silvery-green plant is often abundant on acid heaths and upland grasslands. It is recorded in H12 *Vaccinium myrtillus* heath on the Long Mynd (C.M. Owen, 1983) and the Stiperstones; M2 *Sphagnum fallax* bog at Hodnet Heath (M.F. Godfrey, 2011); M6 *Carex echinata* in Catbatch (D.A. Callaghan, 2012); M15 *Trichophorum germanicum* at Cramer Gutter; and M16 *Sphagnum compactum* at Hodnet Heath (Godfrey, 2011). On Earl's Hill it is 'occasional on scree, in hawthorn scrub and on Oaks Wood floor' (R.D. Porley, 1986).

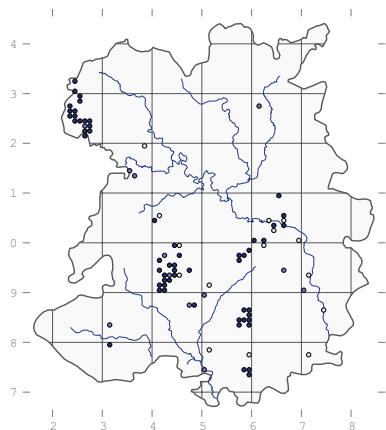
## *Ctenidium molluscum* (Hedw.) Mitt.

### Chalk Comb-moss

First record (as *Hypnum molluscum*): Williams, c. 1800, 'banky pastures in a clayey soil, and springy pastures'.

Sheets of this soft, bushy, yellowish-green moss are a common sight on rocks and earth banks in calcareous habitats such as woods, grasslands and quarries throughout the county. In its typical form it is easily recognised but it is variable in morphology, and rather less easy to identify forms are occasionally found in flushes and on wet, shaded, rocks.

It is recorded in CG2 *Avenula pubescens* at Craig-llwyn and Dolgoch quarries, at Llanymynech Rocks and on Llynclys Hill; M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M10 *Carex dioica* at Trefonen Marshes; M13 *Palustriella commutata* on Hope Bowdler (P. Eades, 2010); M35 *Montia fontana* above Carding Mill Valley (Tapper, 1983); and W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981).



## *Hyocomium armoricum* (Brid.) Wijk & Margad.

### Flagellate Feather-moss

First record: J.B. Duncan, 1902, Titterstone Clee.

Known only on Titterstone Clee, where it occurs on the NE side near

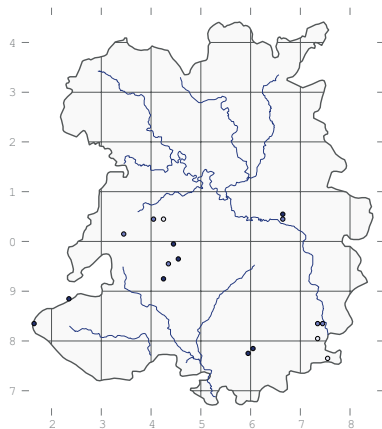
the summit and as far as Catherton Common (M. Lawley, 2001 & 2009).

## *Heterocladium heteropterum* Schimp.

### Wry-leaved Tamarisk-moss

First record: Hamilton and R.D. Benson, 1891, 'Smethcott Falls, Nightshell' (SHY).

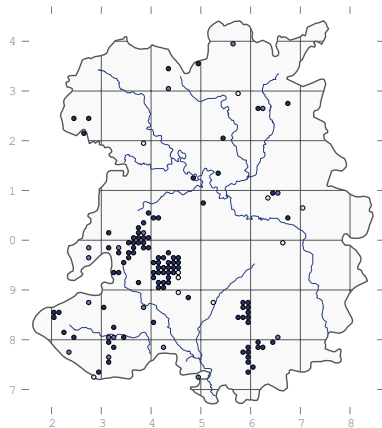
On base-rich rocks in humid, shady places. It is well known in Smethcott Hollow, on Titterstone Clee (first recorded by Hamilton in 1893) and in the Ironbridge Gorge (J.B. Duncan, 1913).



## *Pleurozium schreberi* (Brid.) Mitt

### Red-stemmed Feather-moss

First record: Hamilton, 1886, The Wrekin (SHY).



A calcifuge, found amongst the grass and heather of heaths and open woodland. It is recorded in H8 *Ulex gallii* and H9 *Deschampsia flexuosa* on the Stiperstones; H12 *Vaccinium myrtillus* on the Long Mynd (C.M. Owen, 1983), at Rhos Fiddle and the Stiperstones; M6 *Carex echinata* and M23 *Juncus effusus* on the Long Mynd (D.A. Callaghan, 2012); M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983); U4 *Agrostis capillaris* at Rhos Fiddle; U5 *Nardus stricta* on Titterstone Clee (A.K. Thorne, 1999); U20 *Pteridium aquilinum* in Gogbatch (Owen, 1983); and W4

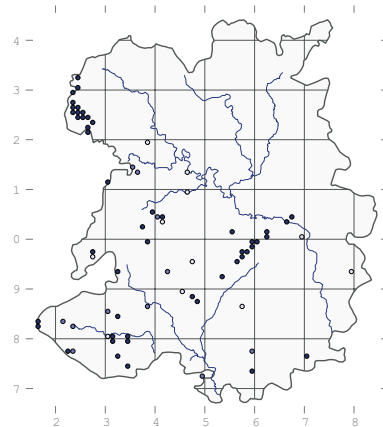
*Betula pubescens* at Shomere Pool (M.J. Wigginton, 1979). A good place to see it is on Earl's Hill, where it is 'abundant in the grassland of the wet meadow, locally abundant in hill grassland on west side; frequent on the scree slope, and occasional on Oaks Wood floor' (R.D. Porley, 1986).

## *Rhytidiadelphus triquetrus* (Hedw.) Warnst.

### Big Shaggy-moss

First record (as *Hypnum triquetrum*): Williams, c. 1800, 'woods and hedges, common.'

Most common in limestone grassland such as CG10 *Helianthemum nummularia* on Llynclys Hill and in open W8 *Fraxinus excelsior* woodland in places like Benthall Edge (first recorded there by W.H. Painter in 1897), Earl's Hill (J.G. Duckett, 1975) and Wenlock Edge (Painter, 1899). In the west of the county it is also frequent in neutral to acid woodland and scrub in areas of high humidity, such as W17 *Leucobryum glaucum* at Vron Wood and both W23 *Ulex europaeus* and W24 *Rubus fruticosus* on hedgebanks at Mellin-y-Groge.



## *Rhytidiadelphus squarrosus* (Hedw.) Warnst.

### Springy Turf-moss

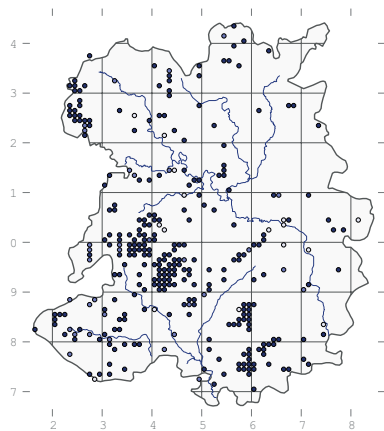
First record (as *Hypnum squarrosus*): Williams, c. 1800, 'hedges and thickets, common.'

Very common in short grassland, including CG2 *Avenula pubescens* on Moelydd; CG3 *Bromopsis erecta* at Hilltop (D.H. Wrench, 1994); CG7 *Thymus polytrichus* on Moelydd; CG10 *Helianthemum nummularia* on Llynclys Hill; MG5 *Festuca rubra* in many places, including Crickheath Hill (Packham, 1979), Guilden Down and Wilderhope; M24 *Cirsium dissectum* at Cole Mere; M25 *Molinia caerulea* at Steel Heath; U1 *Rumex acetosella* at Attingham Park and Prees Heath; U2 *Deschampsia flexuosa* at Brown Moss; U4 *Agrostis capillaris* on Brown Clee, the Long Mynd and Rhos Fiddle; U5 *Nardus stricta* on



the Stiperstones and Titterstone Clee (A.K. Thorne, 1999); and U20 *Pteridium aquilinum* on the Long Mynd (C.M. Owen, 1983) and Titterstone Clee (Thorne, 1999).

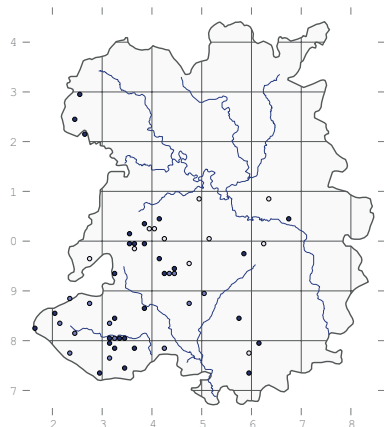
It is sometimes recorded in heathland such as H9 *Deschampsia flexuosa* on the Stiperstones; and in flushes such as M6 *Carex echinata* in Catbatch (D.A. Callaghan, 2012); M13 *Palustriella commutata* on Hope Bowdler Hill (P. Eades, 2010); M23 *Juncus effusus* in Ashes Hollow (Owen, 1983), Cramer Gutter and elsewhere; and M35 *Montia fontana* on Wild Moor (R. Tapper, 1983). Quite often it extends into woodland margins, such as W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981).



### *Rhytidiadelphus loreus* (Hedw.) Warnst.

#### Little Shaggy-moss

First record (as *Hypnum loreum*): Williams, c. 1800, 'In Bomere Wood, Frodesley Park, on the Wrekin, the Caradoc Hill, Stiperstones Heath and other hills in that neighbourhood.'



On acid soils in woods and upland grasslands and heaths. It is particularly frequent on the heaths of the upper slopes of the Long Mynd area where it was recorded in H12 *Vaccinium myrtillus* heath by C.M. Owen in 1983; and it occurs in W17 *Leucobryum glaucum* woodland at Vron Wood. It is often recorded on the Stiperstones, Long Mynd, Oaks Wood and other hills in the south-west, and very occasionally on

limestone hills such as Wenlock Edge – e.g. Wolverton Wood (G. Bloom, 1979) – and the Novers (M. Lawley, 2006), where it is presumably in areas of deeper soil.

### *Loeskiobryum brevirostre* (Brid.) M. Fleisch.

#### Short-beaked Wood-moss

First record (as *Hylocomium brevirostre*): E.B. Benson, 1901, Snailbeach Mineral Railway (SHY).

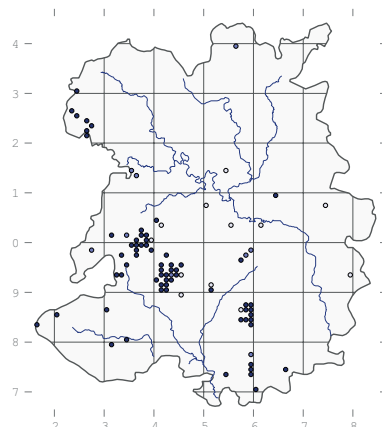
An uncommon moss of bare ground, recorded in the Wyre Forest (J.B. Duncan, 1902), at Stoneyhill (M.O. Hill, 1992) and on Brown Clee (M. Lawley, 2011).

### *Hylocomium splendens* (Hedw.) Schimp.

#### Glittering Wood-moss

First record (as *Hypnum splendens*): Williams, c. 1800, 'hills and in thickets – with capsules on Stevens Hill near Cound.'

The bipinnate shoots and bright red stems make this a conspicuous member of our heaths and moors, particularly on the uplands in the west of the county. It is recorded in CG10 *Helianthemum nummularia* on Llynclys Hill; MG5c *Danthonia decumbens* at Eight Acre Farm, Rushbury (D.H. Wrench, 1994) and Llynclys Hill; and M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983). It is well known on the Stiperstones (first recorded there by E.B. Benson in 1901), Wenlock Edge (M.F.V. Corley, 1979) and Earl's Hill (Hamilton, 1902).



### *Platydictya jungermannioides* (Brid.) H.A. Crum

#### Spruce's Leskea

Just two records (as *Amblystegium Sprucei*), both by J.B. Duncan (NMW): by the Borle Brook at New England (1909) and on dry rocks in woods above Highley (1914).

### *Plagiothecium latebricola* Schimp.

#### Alder Silk-moss

First record: Hamilton, 1892, Lord's Hill (SHY).

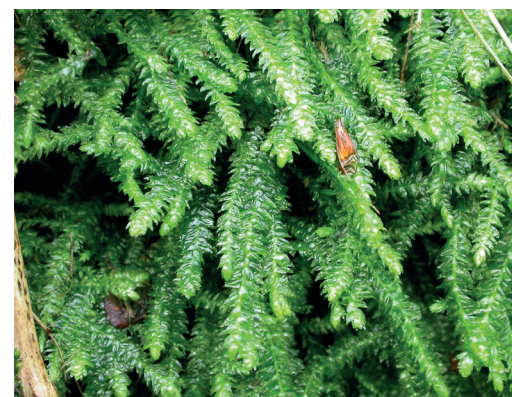
On rotting wood and other vegetation by streams, recorded in the Wyre Forest (C.H. Binstead, 1903), by the Mor Brook (J.B. Duncan, 1908, SHY), at Brock Hall and Sutton (both Duncan, 1909) and recently by the River Rea at Mawley Hall (M. Lawley, 2011, det. T.L. Blockeel).

### *Plagiothecium denticulatum* (Hedw.) Schimp.

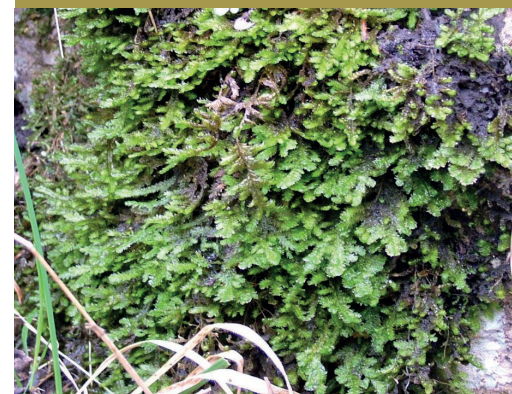
#### Dented Silk-moss

First record (as *Hypnum denticulatum*): Williams, c. 1800, 'banks of brooks and roots of trees.'

On soil and tree bases in woodland or occasionally other shaded habitats. It has been recorded in W7 *Lysimachia nemorum* woodland below the Ercall and W8 *Fraxinus excelsior* at Blodwel Rock (both Trueman, 1981). On Earl's Hill, it is 'abundant on soil and rocks in hawthorn scrub; frequent on tree bases and floor in ash woodland; frequent in Oaks Wood on floor; rare in entrance to rabbit burrows in hill grassland on west side' (R.D. Porley, 1986). It is often recorded at Benthall Edge (firstly by



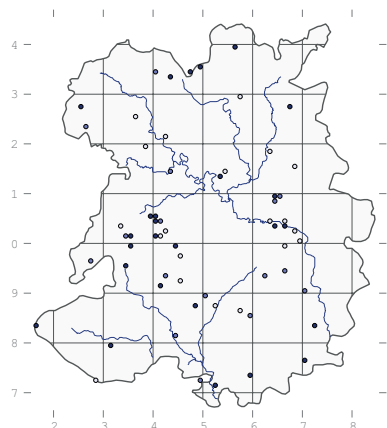
*Plagiothecium undulatum*  
(Dan Wrench)



*Neckera crispa* (Martin Godfrey)



Hamilton in 1903), Brown Moss (E.F. Warburg, 1957) and Cole Mere (E.A. Wilson, 1949).



### *Plagiothecium laetum*

Schimp.

#### Bright Silk-moss

First record: J.W. Bates, 1992, Benthall Edge Wood (det. T.L. Blockeel, BBSUK).

A little-known moss of tree bases and rotting logs, recorded at Gatten Plantation, Tick Wood (M.E. Newton, 1992 & 1994), Hope Bowdler Hill and Stevenshill (both R.F. Shoubridge, 1997), the Ercall (Newton, 1999) and Black Rhadley (M. Lawley, 2002).

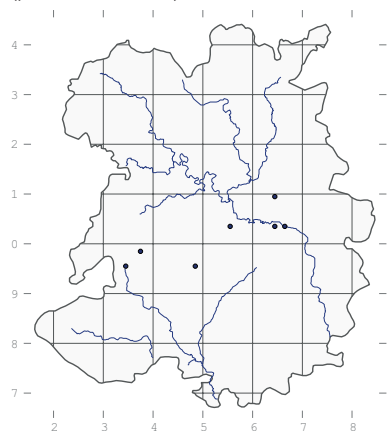
### *Plagiothecium curvifolium*

Schlieph. Ex Limpr.

#### Curved Silk-moss

First record: Hamilton (conf. J.E. Bagnall), 1899, 'near the Lydd Hole.'

In damp woodland such as W5 *Alnus glutinosa* at Cole Mere (M.J. Wigginton, 1979). In Oaks Wood it is 'occasional on rotten wood' (R.D. Porley, 1986). It has also been recorded in places like the Wyre Forest (R.F. Shoubridge, 1998), Harton Hollow (B. Averis, 1988), Haughmond Hill (M.F. Godfrey, 2006), Maddox's Coppice (M. Lawley, 2006) and Titterstone Clee (J.D. Sleath, 1999).



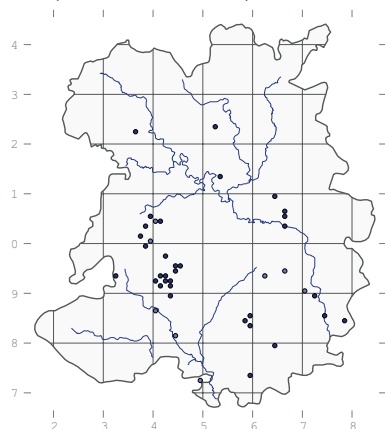
### *Plagiothecium succulentum*

(Wilson) Lindb.

#### Juicy Silk-moss

First record: M.E. Newton, 1970, Bowhills Dingle.

On rocks, trees and on the ground in woods. At Earl's Hill it is 'frequent on the cliff face and occasional on the banks of the Habberley Brook,' (R.D. Porley, 1986). Elsewhere, it has been recorded in places like Ashes Hollow (firstly by M.O. Hill in 1975), Benthall Edge (N.G. Hodgetts, 1992), Brown Clee (G. Bloom, 1979) and Grinshill Hill (M.E. Newton, 1980).



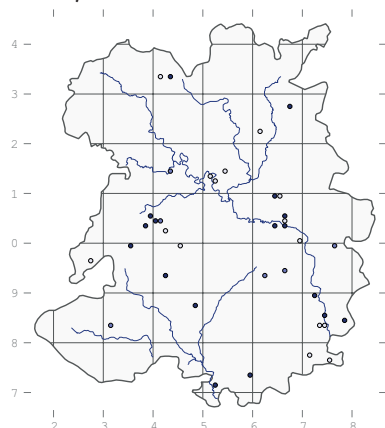
### *Plagiothecium nemorale*

(Mitt.) A. Jaeger

#### Woody Silk-moss

First records (as *P. sylvaticum*): R. Anslow, 1870, Ellerdine Heath and Limekiln Wood.

On trees and banks in woodland and hedges, recorded in places like Bury Ditches (J.B. Duncan, 1913), Earl's Hill (F. Rose, 1960 – M.E. Newton, 1997), Maddox's Coppice (M. Lawley, 2006), Preston Montford (E.F. Warburg, 1957 – Newton, 1980) and Whithalls Wood (Lawley, 2002).



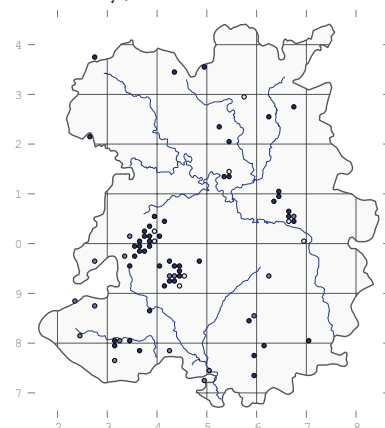
### *Plagiothecium undulatum*

(Hedw.) Schimp.

#### Waved Silk-moss

First records (as *Hypnum undulatum*): Williams, c. 1800, 'at the north end of the Wrekin; in a coppice opposite the rock on Pontserf Hill; on Hawksone and Stiperstones rocks.'

In a variety of habitats on acid, peaty soils such as H12 *Vaccinium myrtillus* heath at Nipstone Rock; M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983); and W16 *Quercus petraea* woodland at Oaks Wood (the 'coppice' where Williams first recorded it) and on the Ercall. It is found in most of the woods on the more acid soils throughout the county, and occasionally in limestone areas where thick soil overlays the substrate, as at Llanymynech Rocks, where it was first recorded by J.L. Daniels, 1992.

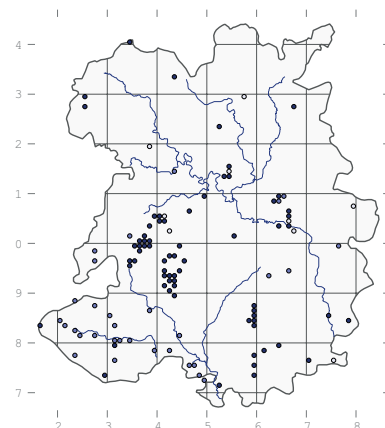


### *Pseudotaxiphyllum elegans*

(Brid.) Z. Iwats.

#### Elegant Silk-moss

First record: R. Anslow, 1870, The Wrekin.



In shady situations on acidic substrates, typically on banks in woods such as Benthall Edge (M.E. Newton, 1982), Bringewood Chase, Clunton Coppice (both R.D. Porley, 1984), Coed-detton and Haughmond Hill (where first recorded by Hamilton in 1902). It is also well known on the Stiperstones (first found by R.D. Benson in 1893), the Long Mynd (J.B. Duncan, 1906) and

Titterstone Clee (Hamilton, 1893). In appearance it is very similar to species of *Plagiothecium* but may be distinguished in the field by its possession of small deciduous branches at the shoot tips.

***Entodon concinnus*** (De Not.) Paris

### Montagne's Cylinder-moss

First record: H.W. Matcham (conf. T.L. Blockeel), 1992, Benthall Edge (BBSUK).

A rather scarce plant, typically of calcareous grassland, it is often difficult to find as it grows as single plants rather than as the more usual mossy turf. There are just four sites in Shropshire: Benthall Edge (Matcham, 1992), Wenlock Edge (Perry, 1995, and Perry & Lawley, 1995), Shadwell Quarry (Lawley, 2006) and Wern ddu Quarry (Lawley, 2007).

***Platygyrium repens*** (Brid.) Schimp.

### Flat-brocade Moss

First record: J.G. Duckett, 1975, River Severn at Atcham Bridge (conf. T.L. Blockeel, BBSUK).

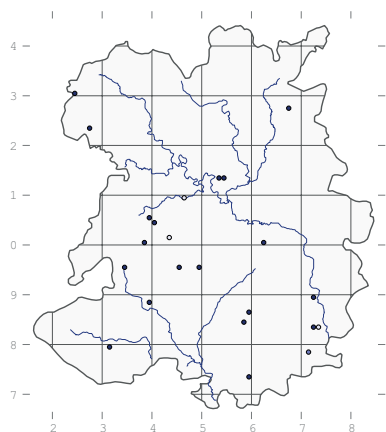
On trees by streams and rivers, recorded recently alongside several small rivers in the south of the county, such as the River Rea at Mawley Hall (M. Lawley, 2001).

***Cryphaea heteromalla*** (Hedw.) D. Mohr

### Lateral Cryphaea

First record: Hamilton, 1893, Redhill.

An epiphyte, typically on Elder by rivers or in quarries. In 1960 S.W. Greene recorded it 'on *Sambucus [nigra]* at edge of lake by Mad Brook, by Hall of Hammonds Coppice' (BIRM) and it has since been found in places like Earl's Hill (F.J. Rumsey, 2004), in W8 *Fraxinus excelsior* woodland by the Borle Brook at New England (M.F. Godfrey, 2010), on Haughmond Hill (M.O. Hill, 2012), and in numerous quarries (M. Lawley, 2006-7).

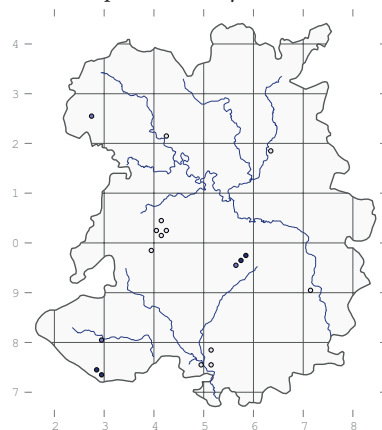


***Leucodon sciurioides*** (Hedw.) Schwägr.

### Squirrel-tail Moss

First record (as *Grimmia sciurioides*): Williams, c. 1800, 'barks of trees, common.'

Like several other epiphytes, this species declined significantly as a result of air pollution. It was still fairly widespread at the end of the 19<sup>th</sup> century, when R.D. Benson recorded it in several places around Pulverbatch and the Stiperstones, and A.W. Weyman found it around Ludlow. It is now quite rare, but possibly recovering, as there are records of it on an apple tree near Sweeney Mountain (D.G. Long, 1975), Wenlock Edge (A.R. Perry, 1995) and another apple tree at Lurkenhope (M. Lawley, 2000).



***Antitrichia curtipendula*** (Hedw.) Brid.

### Pendulous Wing-moss

First record (as *Neckera curtipendula*): Williams, c. 1800, 'on walls by the side of the road on Haghmon Hill; about Ruckley and Acton Burnell.'

Another air pollution-sensitive plant, largely lost from the lowlands. Apart from Williams, the only person who has recorded it is J.B. Duncan, who found it at Clun (1912), Rock of Woolbury (1913) and in the Wyre Forest (1916).

***Pterogonium gracile*** (Hedw.) Sm.

### Bird's-foot Wing-moss

First record: Williams, c. 1800, 'on the Queen's Bower on Haghmon Hill.'

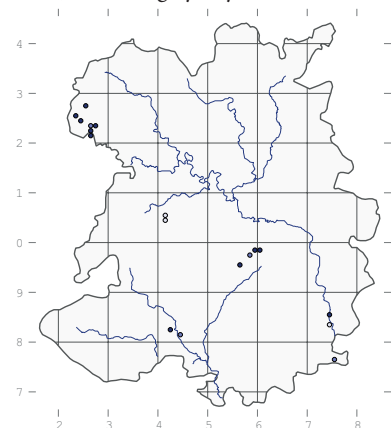
Just a few localities: Strefford Bridge (Hamilton, 1901), Long Mynd (first recorded by T. Laflin, 1957), Coed-detton (M. Lawley, 1999).

***Neckera crispa*** Hedw.

### Crisped Neckera

First record: R.D. Benson, 1890, 'the Lydd Hole' (SHY).

Typically on limestone rock exposures and in short turf in old limestone quarries, but also recorded by Benson in 1893 'growing in a fine mass on the conglomerate rocks near Skin Mill' (*Record of Bare Facts* 1893, STO). At Blodwel Rock it occurs in W8 *Fraxinus excelsior* woodland (Trueman, 1981) and it is often recorded on Wenlock Edge (first by J.B. Duncan in 1913) and in limestone quarries such as Llanymynech Rocks (J.L. Daniels, 1992) and Craig Sychtyn.



***Neckera pumila*** Hedw.

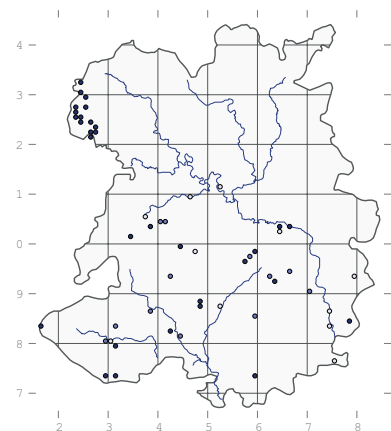
### Dwarf Neckera

Just two records: Williams, c. 1800, 'trunks of trees at the top of Acton Burnell Hill' and J.B. Duncan, 1913, 'Red Wood and on trees in several places in the lanes round Clun.' This is another epiphyte that has declined due to pollution.

***Neckera complanata*** (Hedw.) Huebener

### Flat Neckera

First record (as *Hypnum complanatum*): Williams, c. 1800, 'trunks of trees.'



A big, conspicuous moss of shaded base-rich rocks and walls, and on

the bark of trees in woods such as Hope Coppice (first recorded by E.F. Warburg in 1957), Oaks Wood (R.D. Benson, 1893) and the Wyre Forest (J.B. Duncan, 1902). It is particularly common in quarries on the limestone in the north-west, where it was first recorded at Llanymynech Rocks by J.L. Daniels in 1992.

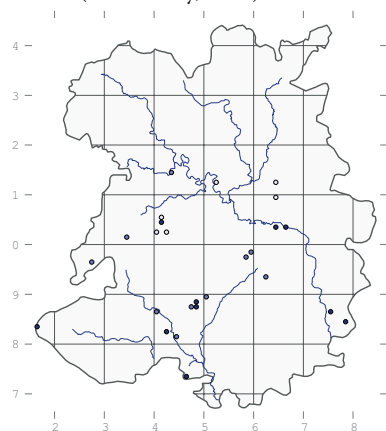
## *Homalia trichomanoides*

(Hedw.) Brid.

### Blunt Feather-moss

First record (as *Hypnum trichomanoides*): Williams, c. 1800, 'roots of trees and by the sides of brooks.'

Another big, conspicuous moss of shaded rocks and the bases of trees. It is frequent in W8 *Fraxinus excelsior* woods, as at Harton Hollow (B. Averis, 1988), Weirhill Wood (Hamilton, 1893) and Eaton Coppice (N.G. Hodgetts, 1984). On Earl's Hill it is 'a frequent associate of the tree base community in the ash woodland. Rare on trunks in ash woodland and banks of Habberley Brook' (R.D. Porley, 1986).

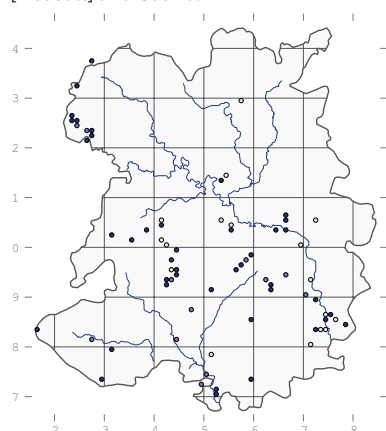


## *Thamnobryum alopecurum*

(Hedw.) Gangulee

### Fox-tail Feather-moss

First record (as *Hypnum alopecurum*): Williams, c. 1800, 'ditch banks and roots of trees in shady places – about Eaton [Mascott] and Cound.'



Frequent on trees, rocks and soil in woods, especially W8 *Fraxinus excelsior*, as at Blodwel Rock (Trueman, 1981) and on a dry stone wall in a wood at Stevenshill; and 'abundant along banks of the Habberley Brook' (R.D. Porley, 1986). It is particularly frequent in the woods of the lower Severn valley, where it was first recorded by J.B. Duncan in 1901, and on the limestone in the north-west (Trueman, 1981).

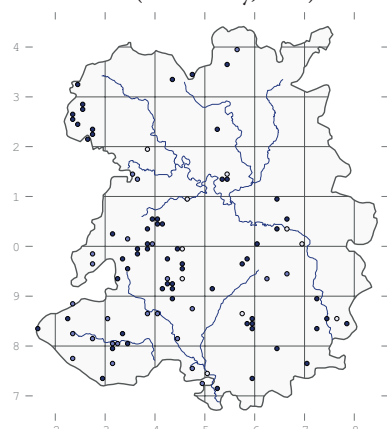
## *Isothecium myosuroides*

Brid.

### Slender Mouse-tail Moss

First record (as *Hypnum myosuroides*): Williams, c. 1800, 'common.'

A common woodland plant with a curious dendroid growth habit. It may be found on tree trunks and rocks, where it favours non-calcareous substrates. It is smaller than the following species and they may be told apart by their leaf shape – pointed in this species, blunt in *I. alopecuroides*. It has been recorded in W5 *Alnus glutinosa* at Cole Mere (J. Mallabar, 1998) and in W8 *Fraxinus excelsior* at Blakeway Coppice and by the Borle Brook at New England (M.F. Godfrey, 2010). At Earl's Hill it is 'rare on the cliff face, occasional on tree bases and fallen wood in the ash woodland and Oaks Wood' (R.D. Porley, 1986).



## *Isothecium alopecuroides*

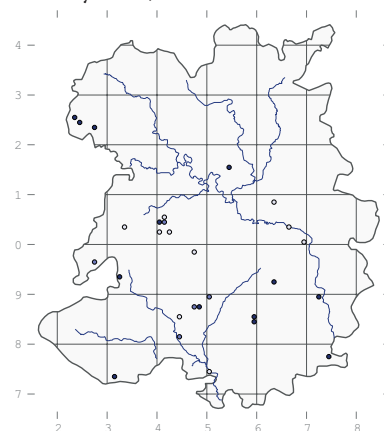
(Dubois) Isov.

### Larger Mouse-tail Moss

First record (as *Hypnum curvatum*): Williams, c. 1800, 'trunks of trees.'

Far less frequent in Shropshire than *I. myosuroides*, this too is a woodland plant. Growing on the ground as well as tree bases and rocks, this species is more usually found in base-rich habitats. Our records are scattered throughout in suitable habitats, in places like Earl's Hill, where it is 'abundant on scree in ash woodland,

rare on tree trunks and fallen wood in ash woodland' (R.D. Porley, 1986), Harton Hollow (B. Averis, 1988), Jones's Rough (M. Lawley, 2003) and Haughmond Abbey Wood (M.F. Godfrey, 2006).



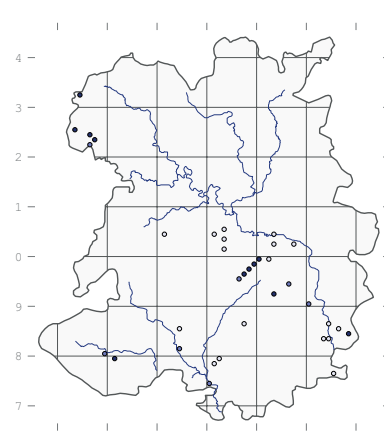
## *Anomodon viticulosus*

(Hedw.) Hook. & Taylor

### Rambling Tail-moss

First record (as *Neckera viticulosa*): Williams, c. 1800, 'on the wall round Acton Burnell Park and on roots of trees by the side of Eaton and Pitchford brooks.'

This big bushy species is common on base-rich rock outcrops. Its rather curious structure can lead the unwary to mistake it for an acrocarpous moss rather than the pleurocarp that it is. Good places to see it include Blakeway Coppice, Llynclys Quarry (D.H. Wrench, 1995) and Rock of Woolbury (J.B. Duncan, 1913 – A.R. Perry, 1995).







# Vascular Plants

## Lycopodiaceae

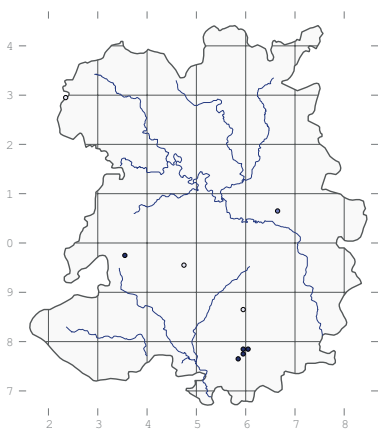
***Hyperzia selago*** (L.) Bernh. ex Schrank & Mart.

### Fir Clubmoss

Native. Rare. Stable. Axioophyte: heaths.

First records (as *Lycopodium selago*): Williams, c. 1800, 'Brown Clee Hill, Stiperstones Heath and Titterstone Clee Hill.'

Just two sites: 'abundant over 50 m of scree' on Titterstone Clee (SO598782, J. Bingham, 2011) and rare along a track at Nipstone Rock (SO357970, D.H. Wrench, 2012). In the former site the vegetation could be described as U21 *Cryptogramma crispa*-*Deschampsia flexuosa* community and in the latter it grows in H12 *Vaccinium myrtillus* heath with two other species of clubmoss. In the past it has also been recorded on Caer Caradoc (Leighton, 1841) and on mine waste at Stoneyhill (1983). There are also records for Craig-y-rhiw (Diamond, 1891) and the Longmynd (G.H. Griffiths, ca. 1870) which should be treated with caution.



***Lycopodiella inundata*** (L.) Holub

### Marsh Clubmoss

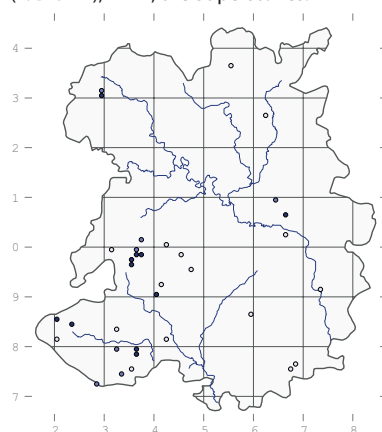
Collected by H. Sandford at Brown Moss in the 1840s (det. J.C. Melvill) (*Record of Bare Facts* 22, 1912).

***Lycopodium clavatum*** L.

### Stag's-horn Clubmoss

Native. Scarce. Stable. Axioophyte: heaths.

First record: 'a Student in Physick' (L. Brown), 1727, the Stiperstones.



Occasional in heathland, often on patches or bare ground or sprawling over heather. It is intolerant of burning and heavy grazing, but it thrives on disturbance such as heathland restoration and the construction of tracks. In the past it used to occur in the lowlands, notably as low as 75 m at Hodnet Heath (Williams, 1800) but it is now largely confined to the uplands.

Good places to look for it currently are along the track up to Nipstone Rock (D. Hatfield, 2002), where it is abundant in H12 *Vaccinium myrtillus*, and near the Gliding Club on the Long Mynd (SO404904, B. Wheeler, 2011) where it grows in H9 *Deschampsia*

*flexuosa* heath which was recently restored from woodland, and H12 *Vaccinium myrtillus* on the edges of the forestry rides. The highest altitude for it in the county is about 490 m at Gatten Plantation (SO369984, 2002).

***Diphasiastrum alpinum*** (L.) Holub

### Alpine Clubmoss

Native. Rare. Casual. Moorland.

First record: L. Brown, 1726, the Stiperstones.

Still present on the Stiperstones at Nipstone Rock (SO357970), where it was rediscovered in 2012 by D.H. Wrench after a record breaking gap of 286 years: just one plant, in H12 *Vaccinium myrtillus* heath. In 1984 it turned up in an opencast coal mine at Stoneyhill in Telford (R. Lamb) where it occurred on thinly-vegetated acidic mine waste with two other species of clubmoss, in some abundance. It only persisted for a short while, however, and was last seen in 1991 (J.D. Box).

## Selaginellaceae

[*Selaginella selaginoides* (L.) Link, Lesser Clubmoss]

Listed by G.H. Griffiths in about 1870, who described it as abundant on the Longmynd Hills. It seems unlikely that it could have been overlooked by so many other botanists, and this record is best treated as an error.]

***Selaginella kraussiana***

(Kuntze) A. Braun

### Kraus's Clubmoss

Naturalised outside the greenhouses at The Mount, Shrewsbury (SJ485130, P. Boyd, 1998).

## Isoetaceae

### *Isoetes lacustris* L.

#### Quillwort

Native. Rare. Last recorded in 1893. Oligotrophic pools.

First record: Williams, c. 1798, Bomere Pool.

Subsequently recorded at Bomere Pool by W. Phillips in 1874 (K), T. Butler in 1880 (SHY) and R.M. Serjeantson in 1893 (SHY). Sinker's (1985) comment that it survived there until the 1950s appears to be unsubstantiated. W.E. Beckwith also collected it at the Mere at Ellesmere in 1883 (BM). A record by G.H. Griffiths (c. 1870) for the Long Mynd is dubious. It is an indicator of unpolluted clear water and it is still found in mountain lakes in Wales, but not in lowland England.

## Eusporangiate ferns

### Ophioglossaceae

#### *Ophioglossum vulgatum* L.

#### Adder's-tongue

Native. Local. Stable. Axiophyte: unimproved grassland.

First record: Williams, c. 1800, meadows about Eaton Constantine, Leighton, Golding and Berrington.

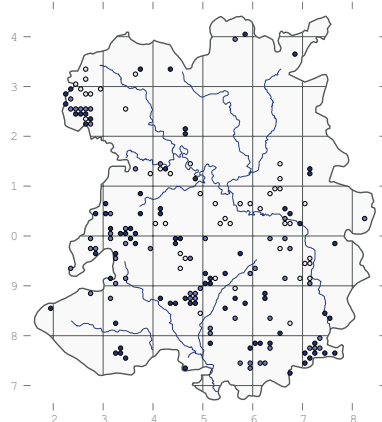


*Huperzia selago* at Titterstone Clee



*Equisetum telmateia* at Loamhole Dingle

In species-rich grassland, often persisting in light woodland and under bracken, and in these conditions it can grow much larger than the diminutive specimens that are often found in short grassland. It is most typical of MG5 *Festuca rubra* in places such as Stocking Meadows (Trueman, 1981) and Ropewalk Meadow, but it can also occur in U4 *Agrostis capillaris*, as on Brown Clee. Although largely confined to old pastures and hay meadows, it is also known to colonise new sites such as Lilleshall Quarry on Wenlock Edge. At Earl's Hill it used to be common in a meadow just above the Habberley Brook, where it survived for about 40 years as the grassland gradually succeeded to woodland, but eventually it died out. It is still abundant in the new fields recently added to the reserve. A good place to look for it is in the grassland strip along the track of the Elan pipeline through the north of the Wyre Forest. Altitude: up to 380 m on Brown Clee (SO58638676, 2012).

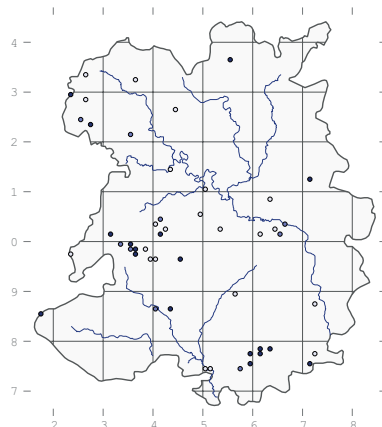


#### *Botrychium lunaria* (L.) Sw.

#### Moonwort

Native. Local. Decreasing. Axiophyte: unimproved grassland.

First record: J. Babington, 1803, 'in a meadow near Ludlow.'



In short, open grassland, often on impoverished, shallow and free-draining soils in species-rich grassland, or sometimes on old spoil heaps. It

is recorded in U1 *Rumex acetosella* on spoil heaps on Titterstone Clee (Trueman, 1981), where it was first recorded by G. Jordan in 1856, and in many MG5 *Festuca rubra* meadows such as those at Bell Coppice, Llynclys Hill and Pennerley. Altitude: up to 485 m on Titterstone Clee (SO592777, Trueman, 1981).

## Calamophytes

### Equisetaceae

#### *Equisetum hyemale* L.

#### Rough Horsetail

Native or archaeophyte. Rare. Last recorded in 1877. Wooded streams.

First record: Williams, c. 1800, 'by the side of a rill towards the east end of Cantlop Wood.'

In a dell at Bitterley (T. Moore, 1862), in the Wyre Forest (Shropshire side) (G. Jordan, 1871, SHY), at Town Mills, Bridgnorth (Miss Brown, 1877). All of these are seemingly by streams, which is the natural habitat of this species, so it may be assumed that it was native, although it was also widely cultivated at one time.

#### *Equisetum fluviatile* L.

#### Water Horsetail

Native. Local. Stable. Axiophyte: mesotrophic ponds, ditches and swamps.

First records: Williams, c. 1800, 'boggy grounds and ditch-banks – by the side of Golden pool – by the side of the turnpike road above Harley.'

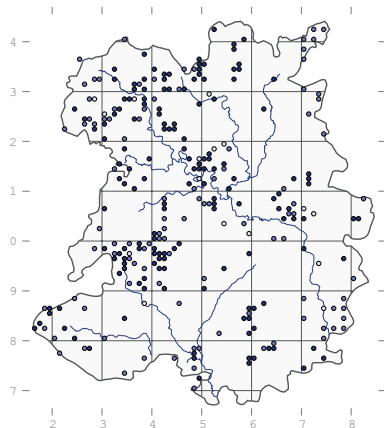
Generally in standing or slow-flowing water, and only occasionally along the banks of faster rivers. It is recorded in A10 *Persicaria amphibia* community at Berrington Pool; MG8 *Caltha palustris* grassland at Crose Mere; MG10 *Holcus lanatus* at Ruewood (S.A. Ellis, 1987); M13 *Palustriella commutata* at Trefonen Marshes; M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991) and Crose Mere; M23a *Juncus acutiflorus* on Stapeley Hill (Trueman, 1981); OV26 *Epilobium hirsutum* at Berrington Pool (M.J. Wigginton, 1979) and the Old River Bed, Shrewsbury.

In swamp communities, it is the dominant component of S10 *E. fluviatile* vegetation, which is recorded at Berrington Pool (Wigginton, 1979), Boyne Water and the Old River Bed; and it is also found in S3 *Carex paniculata* at Sweat Mere (B.D.



Wheeler, 1986); S7 *C. acutiformis* at the Old River Bed; S9 *C. rostrata* at Berrington Pool and Wildmoor Pool (Trueman, 1981); S12 *Typha latifolia* swamp at Berrington Pool, Brown Moss, Brownheath Moss and the Long Bog; S14 *Sparganium erectum* at Berrington Pool (Wigginton, 1979) and Castle Pools (Trueman, 1981); S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Top Pool; and S27 *Comarum palustre* at Berrington, Bomere (both Wigginton, 1979) and Shrawardine pools.

It sometimes persists in light woodland, such as W1 *Salix cinerea* around Berrington Pool, and W5 *Alnus glutinosa* in Haughmond Abbey wood. Altitude: up to 535 m on the summit of Brown Clee (SO59368650, 2004).

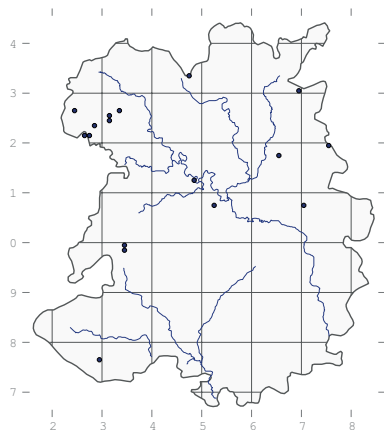


***Equisetum × litorale* Kühle**  
ex Rupr. (*fluviatile* × *arvense*)

**Shore Horsetail**

Native. Scattered. Stable. Damp roadsides and canal towpaths.

First record: Whild, 1995, Aston Locks.



In widely scattered locations, often in rather ruderal habitats. It particularly favours canal sides, as it has been recorded along the Montgomery Canal in several places, the Newport Canal and the Shropshire Union Canal at Woodseaves. It grows in abundance along the track leading to Wem Moss from Northwood, at Round Hill,

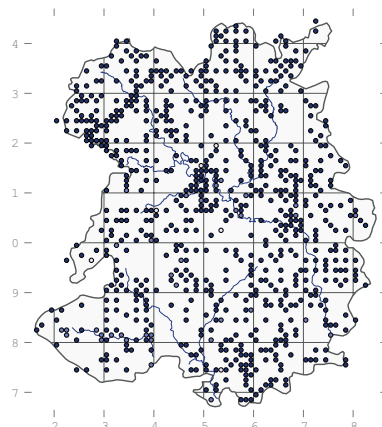
Pennerley, and on damp roadside verges at Hardwick and Berrington. A good place to see it is on the banks of the Severn in the Quarry, Shrewsbury, just below Kingsland Bridge (SJ489120, 2010).

***Equisetum arvense* L.**

**Field Horsetail**

Native. Widespread. Stable.

First record: Williams, c. 1800, 'pastures, common.'



In a wide variety of habitats, including highly disturbed ones such as arable fields. It is common in grassland such as CG2 *Avenula pubescens* in Dolgoch Quarry; MG5 *Festuca rubra* at Marl Allotment; MG6 *Cynosurus cristatus* on the bank of the Severn in Becks Field; MG8 *Caltha palustris* at Morton Pool (D.H. Wrench, 1991; and MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981).

It also occurs in flushes and fens such as M10 *Carex dioica* at Hope Bowdler (P. Eades, 2010) and Trefonen Marshes (Trueman, 1981); M13 *Palustriella commutata* at Trefonen; M22 *Juncus subnodulosus* at Crose Mere, Trefonen (both Trueman, 1981) and Sweeny Fen; M23 *Juncus effusus* at Gogbatch (C.M. Owen, 1983), on a lake margin on Brown Clee, and in a flushes on Paulith Bank and Stapeley Hill (all Trueman, 1981); and M27 *Filipendula ulmaria* at Marl Allotment. There are records of it in S7 *Carex acutiformis* swamp in the Old River Bed; S18 *C. otrubae* at the Speller; and S28 *Phalaris arundinacea* in a ditch at Hendre and OV26 *Epilobium hirsutum* in the Old River Bed.

In open vegetation it is found in OV10 *Senecio vulgaris* community in arable fields at Lower Faintree; OV13 *Capsella bursa-pastoris* in a field at Upton Cressett; OV23 *Dactylis glomerata* on a road verge at Uppington; and OV37 *Festuca ovina* on spoil heaps at Snailbeach (both Trueman, 1981).

Sometimes it persists in woodland such as W6d *Sambucus nigra* along the Severn in Shrewsbury; and W8 *Fraxinus excelsior* in Redhill Coppice and in a hedge at Henley.

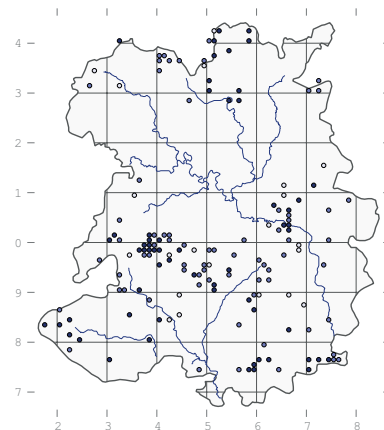
***Equisetum sylvaticum* L.**

**Wood Horsetail**

Native. Local. Declining. Axiophyte: deciduous woodland, upland flushes, acid grassland.

First records: Williams, c. 1800, 'corn and fallow fields between Prior's Ditton and the Brown Clee Hill; Brown Clee hill; wood between Sidbury and the turnpike road to Bridgnorth; in a boggy copse on the east side of the Stiperstones Hill; and about Ruthall near Prior's Ditton.'

In woodland and grassland, usually in upland areas. At Rushbury it grows in MG5 *Festuca rubra* grassland (D.H. Wrench, 1994) but it is more often found in W8 *Fraxinus excelsior* woodland, as at Benthall Edge, or even in W7 *Lysimachia nemorum* in more upland situations such as at Brook Vessons. A good place to see it is in a wood on the Stiperstones below the old Gatten Plantation (SO370981), where it is very abundant. An atypical site is Brown Clee, where it grows in short grassland on ancient spoil heaps on the summit. The plants here are somewhat dwarfed by exposure and possibly soil toxicity. There is some evidence for a decline in the lowland populations - in Benthall Edge Wood, for example, it is now very rare but it has been known there since 1805 (D. Turner) and it was probably once commoner. Altitude: up to 518 m on Brown Clee (SO59578664, 2004, BIRM).





### *Equisetum palustre* L.

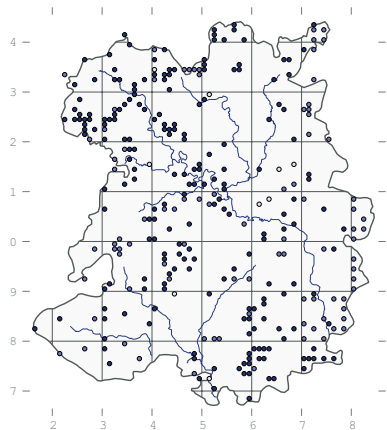
#### Marsh Horsetail

Native. Widespread. Stable. Lakes, ponds, canals and marshy grassland.

First record: Williams, c. 1800, 'shallow ponds and boggy grounds.'

Although this is widely distributed, it is quite restricted by habitat and almost qualifies as an axiophyte of mesotrophic, neutral to strongly calcareous wetlands, marshy grassland, mires and swamps. It is characteristic of MG8 *Caltha palustris* grassland at Ruewood (Trueman, 1980) and Morton Pool and it grows in MG10 *Holcus lanatus* at Fenemere (C. Walker, 1988). In mires it is occasional along streams in the uplands, in M10 *Carex dioica* on Titterstone Clee (A.K. Thorne, 1999) and M35 *Montia fontana* in Lightspout Hollow (R. Tapper, 1983); whereas in the lowlands it is found in M22 *Juncus subnodulosus* at Sweeny Fen and Morton Pool (D.H. Wrench, 1991) and in M23 *Juncus effusus* at Ruewood (P. Welsh, 1981).

It is most abundant in lowland swamps such as the Old River Bed, where it is frequent in S7 *Carex acutiformis* and S10 *Equisetum fluviale*, and even in OV26 *Epilobium hirsutum* community. At Fenemere it occurs in S24 *Calamagrostis canescens* fen. An example of an earlier successional stage is OV31 *Rorippa palustris* vegetation at Venus Pool, and it is quite often found in pools with little other vegetation in quarries such as Dolgoch. Occasionally it grows in woodland such as the unusually wet example of W8 *Fraxinus excelsior* that occurs at The Bog, Wilderhope. It is occasional throughout the county, avoiding only the most acid soils, such as on the Stiperstones, some heaths and on lowland mires. A good place to see it is at Aston Locks on the Montgomery Canal, where a number of other horsetails can also be found.



[*Equisetum* × *font-queri* Rothm. (*palustre* × *telmateia*), Skye Horsetail Reported by A.R. Busby in 1983 from the Montgomery Canal at Queen's Head, but never seen there again, despite many searches, and no voucher specimen is known.]

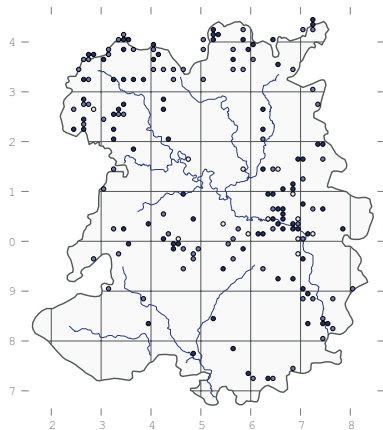
### *Equisetum telmateia* Ehrh.

#### Great Horsetail

Native. Local. Stable. Woods, damp grassland, ditches.

First record: Williams, c. 1800, Golding Pool and near Harley.

Forming extensive stands in places such as damp roadsides, clearings in woods and the edges of arable fields such as those alongside the Montgomery Canal at Aston Locks. It is recorded in M27 *Filipendula ulmaria* in Tunstall Wood; OV30 *Capsella bursa-pastoris* in the margin of a field of rape at Upton Cressett; W6 *Salix* × *fragilis* in Loamhole Dingle and Redhill Coppice; W8 *Fraxinus excelsior* in Whitwell Coppice; and W9 *Sorbus aucuparia* in Betchcott Hollow. Lowland: up to about 240 m at Betchcott Hollow (SO446986, 2012).



## Leptosporangiate ferns

### Osmundaceae

#### *Osmunda regalis* L.

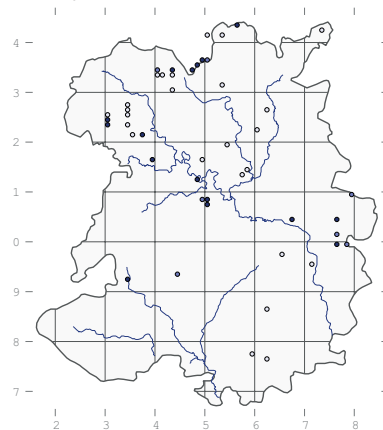
##### Royal Fern

Native. Scarce. Decreasing. Axiophyte: mire and wet heath.

First record: A. Aikin, 1796, 'on Knockin heath.'

In W4 *Betula pubescens* woodland at Shomere Pool and W5 *Alnus glutinosa* at Morton Pool and Oss Mere. Sometimes it is found in the open on M2 *Sphagnum fallax* lawns, as at Clarepool Moss, but the bigger plants are always in woodland. In

some places it has been introduced quite successfully, as at Badger Dingle (W.E. Hutton, 1971 – 1986). Although it is generally an indicator of ancient peatlands, it can turn up in new sites, such as Dale Coppice, where it has become established in a seepage on old mining waste.



## Hymenophyllaceae

[*Hymenophyllum tunbrigense* (L.)

Smith, Tunbridge Filmy-fern

Listed by G.H. Griffiths, c. 1870, 'on the Long Mynd, near the Stiperstones.' Possibly an error for *H. wilsonii*.]

### *Hymenophyllum wilsonii*

Hook.

#### Wilson's Filmy Fern

Native. Rare. Stable. Axiophyte: rock outcrops.

First record: Leighton, 1840, Treflach Wood (SHY).

Just one current site, in New Pool Hollow, where it was discovered by Packham in 1975 (conf. A.C. Jermy, BM). There is one small patch on a wet rock face on a north-facing slope (SO433944, J.L. Denyer, 2005). This might well be the same place that it was found by J.F. Crouch in 1877 ('Spout Valley') and W. Phillips in 1905 ('Longmynd') (SHY). It was last seen at Treflach by E. Farmer in 1864 (LDL).

### *Trichomanes speciosum*

Willd.

#### Killarney Fern

Native. Rare. Stable. Axiophyte: sandstone rock exposures.

First record: F.J. Rumsey and A.C. Jermy, 1999, Grinshill Hill (SJ521238).

Gametophyte stage only, which resembles a layer of moss or algae in damp, sunless crevices in sandstone cliffs. Rumsey and Jermy also found it in three places at Burcote Rocks (SO742952 etc, 1999).

## Marsileaceae

### *Pilularia globulifera* L.

#### Pillwort

Native. Rare. Last recorded in 1962. Pools.

First record: Williams, c. 1800, by the side of Bomere and Betton upper pools; pool between Nesscliffe & Knockin.

In shallow water on bare sandy soil or peat at the edges of pools and lakes. The only recent site for it was Brown Moss, where it was found by A.M. Stirling in 1956 (GM) and it was subsequently recorded by E.M. Rutter in 1962 (SHY, SUN). It is believed to have gone during the drought of 1976. There are old records for a bog at Ashfield (G. Potts, 1904), Gravenhunger Moss (G. Pinder, 1844) and White Mere (E.F. Linton, 1892).

## Salviniaceae

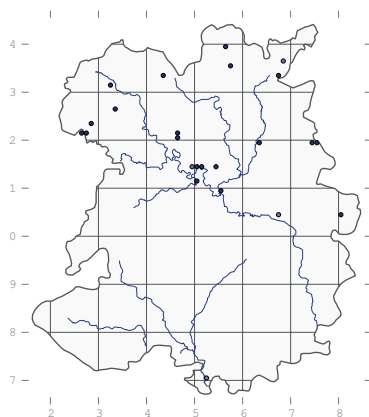
### *Azolla filiculoides* Lam.

#### Water Fern

Neophyte. Scattered. Casual. Ponds, canals and rivers.

First record: A.P. Bell, 1977, 'in a farm pond at Betton, becoming very dense in the summers of 1975 and 1977, but destroyed by the hard winter of 1981/2.'

A short-lived but sometimes abundant introduction in meso- and eutrophic water bodies, such as the Montgomery, Newport (T. McLean, 1981) and Shrewsbury canals; in pools at Brown Moss, Haughmond Hill and Heathgates; and even in rivers such as the Teme at Ashford Carbonel (N.T.H. Holmes, 1980) and the Tern at Waters Upton (A. Crawford, 1988). So far it has not appeared to persist at any site in Shropshire.



## Dennstadiaceae

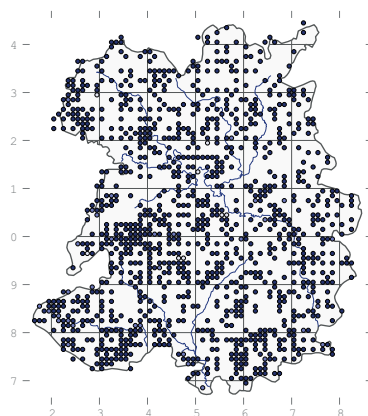
### *Pteridium aquilinum* (L.)

Kuhn

#### Bracken

Native. Widespread. Stable. Woodland, acid grassland, hedges, mires and heaths.

First record: Williams, c. 1800, 'hills and pastures, common.'



In a wide variety of habitats, particularly grassland, where it can become very abundant. It is recorded in CG2 *Avenula pubescens* at Moelydd; CG3 *Bromopsis erecta* at the Foxholes; CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981); MG1 *Arrhenatherum elatius* alongside the Llangollen Canal at Welshampton and at Roman Bank; MG5 *Festuca rubra* on Llynclys Hill; MG9 *Holcus lanatus* in a clearing in Easthope Wood; M23 *Juncus effusus* at Brook Vessons; U1 *Rumex acetosella* on Earl's Hill, Lyth Hill, Attingham Deer Park and elsewhere; U4 *Agrostis capillaris* at Rhos Fiddle, the Long Mynd and Westcott Hill (Trueman, 1981); and of course U20 *P. aquilinum* community at Gogbatch (C.M. Owen, 1983), Titterstone Cleef (A.K. Thorne, 1999) and Perkins Beach.

It is widespread and sometimes abundant in woods such as W4 *Betula pubescens* on Haughmond Hill; W5 *Alnus glutinosa* at Blake Mere (M.J. Wigginton, 1979); W7 *Lysimachia nemorum* at Fastings Coppice; W8 *Fraxinus excelsior* in Limekiln Wood, on Llynclys Hill and elsewhere; in W10 *Quercus robur* throughout; W16 *Q. petraea* at Clarepool Moss, the Ercall, Sowdley Wood and elsewhere; in W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood; W21 *Crataegus monogyna* on Earl's Hill; W23 *Ulex europaeus* on old Oswestry; and W24 *Rubus fruticosus* scrub on a road verge at Abdon.

In heaths, it is found in H9 *Deschampsia flexuosa* on the Wrekin

(Trueman, 1981) and the Stiperstones; H12 *Vaccinium myrtillus* on the Long Mynd (Trueman, 1981) and the Stiperstones; and M16 *Sphagnum compactum* at Hodnet Heath.

## Pteridaceae

### *Cryptogramma crispa* (L.)

R.Br. ex Hook.

#### Parsley Fern

Native. Rare. Stable. Axiphyte: upland grassland & heath.

First record: J. Babington, 1803, Brown Cleef.

Just one site, on Titterstone Cleef, where it is frequent amongst the basalt boulder scree around SO592780 at an altitude of about 505 m (A.C. Jermy, 2002). It was first recorded here by E. Newman in 1854. The last record of it on Brown Cleef was by W.G. Clark-Maxwell in 1926, who wrote 'in fair quantity, but in danger from the extension of the quarries.'

[*Adiantum capillus-veneris* L., Maidenhair Fern.

Recorded by Fred Westcott on Titterstone Cleef in 1827 (Westcott 1843), but this is generally thought to have been an error (Sinker *et al.*, 1985, p. 28). Also found by W.E. Beckwith in 1875 on the Wrekin, but it later transpired that it had been planted there and did not persist (Hamilton 1909).]

### *Pteris multifida* Poir.

#### Spider Brake

Neophyte. Rare. Increasing. Towns.

Just one record: established and presumably self-sown from house plants on a basement wall in Albert Street, Shrewsbury (SJ496130, 2007, det. H.J. Crouch & F.J. Rumsey, BIRM).

## Aspleniaceae

### *Asplenium scolopendrium*

(L.) Newman

#### Hart's-tongue

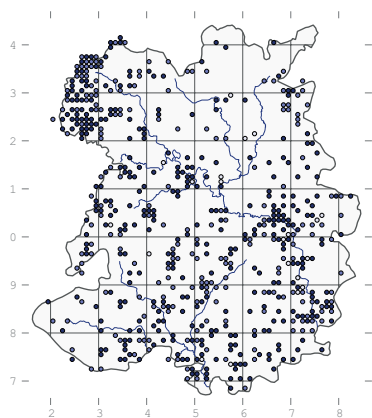
Native. Widespread. Stable. Woods, walls and rock faces.

First record (as *Scolopendrium vulgare*): Williams, c. 1800, 'rocks, shady lanes and mouths of wells.'

In humid and damp places, always on well-drained substrates, often steep slopes or vertical walls. It favours calcareous habitats such as limestone quarries, mortar in old walls and

## Vascular plants

eroding banks, often in rather shady situations. In semi-natural habitats it is largely restricted to W8 *Fraxinus excelsior* woodland in places like Badger Dingle (Trueman, 1981), Betton Dingle, and Knowle Wood by the Borle Brook at New England. It is also common in OV39 *Asplenium trichomanes* community on walls and occasionally on natural rock faces. Plants are very variable in size, from tiny clusters a few centimetres across clinging to exposed rock faces, to large clumps with fronds 1 m long growing luxuriantly in woods. One of the best places to see it is in the cutting of the Shropshire Union Canal east of Woodseaves, where it is exceptionally abundant and variable; it was first recorded there by J.R. Jebb in about 1877.

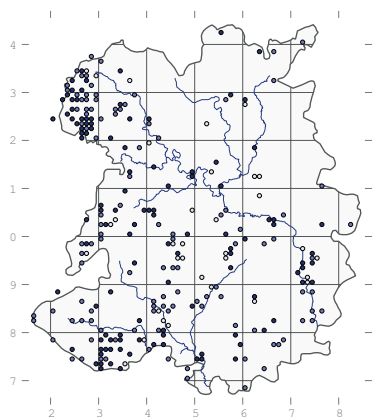


### *Asplenium adiantum-nigrum* L.

#### Black Spleenwort

Native. Local. Stable. Walls, hedgebanks, limestone rocks, quarries.

First record: L. Brown, 1725, 'upon a wall in Frog Lane, Ludlow.'



On limestone cliffs such as Blodwel Rock and scree slopes such as those on Llynclys Hill and Earl's Hill, usually in rather open W8 *Fraxinus excelsior* woodland. Elsewhere it is found on steep roadside hedgebanks and old walls, and it seems especially common

on canal and railway bridges, such as those along the Montgomery Canal at Rednal or the Old Potteries Railway at Hanwood. It was found in several sites during the recent quarries survey in 2006: Alberbury, Blackbridge, Butcher's, Crickheath, Llynclys (all A.K. Thorne), Lilleshall, Nills Hill and Titterstone (N. Button). One of the best places to see it is at Coed-detton, where it occurs on uncharacteristically acid rock outcrops in an area of high humidity.

[*Asplenium obovatum* Viv., Lanceolate Spleenwort

Listed (as *A. lanceolatum*) in Turner & Dillwyn (1805) at Hagmon [Haughmond] Hill by Arthur Aikin, but best considered unconfirmed.]

### *Asplenium trichomanes* L.

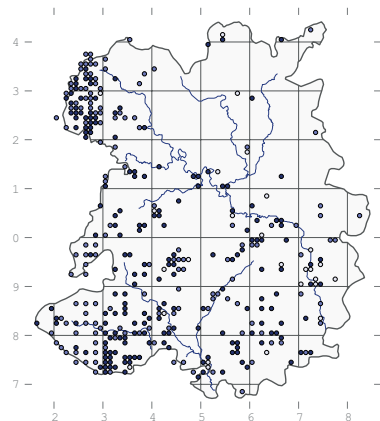
#### Maidenhair Spleenwort

Native. Widespread. Stable. Walls and rock exposures.

First record: Williams, c. 1800, 'old walls and rocks' on Haughmond Hill.

Mainly in fairly humid areas in the hills and the river valleys, becoming much rarer on the plain. It requires basic substrates such as old mortar, limestone quarries and base-rich scree. It is typical of open W8 *Fraxinus excelsior* woodland or scrub in places like Blodwel Rock (Trueman, 1981) or W21 *Crataegus monogyna* scrub, as on Earl's Hill. It is also found in W10 *Quercus robur* woodland on the conglomerate outcrops at Nortoncamp Wood. Its most common and characteristic habitat is of course OV39 *A. trichomanes* community, which is common on walls and rock exposures such as Holloway Rocks (Trueman, 1981).

The only subspecies to have been recorded in the county is ssp. *quadrivalens* D.E. Mey., which is the commonest form on calcareous substrates.



[*Asplenium viride* Huds., Green Spleenwort

Light Spout, G.H. Griffiths, c. 1870. Undoubtedly a mistake, and rejected by Benson (1904).]

### *Asplenium ruta-muraria* L.

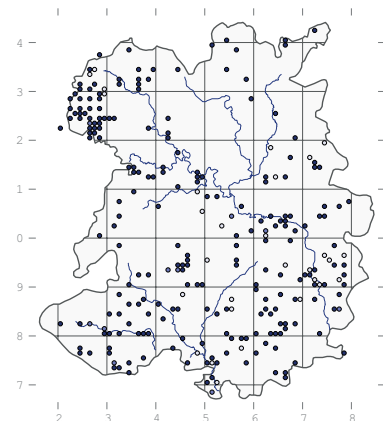
#### Wall-rue

Native. Widespread. Stable. Walls and limestone.

First record: Williams, c. 1800, 'old walls, not uncommon.'

Native but rare on natural limestone exposures in places like Craig-y-rhiw (first recorded there by Whitwell, c. 1867, and still present). It is confined to OV39 *A. trichomanes* community, as at Holloway Rocks (Trueman, 1981).

Elsewhere it is generally found on walls, usually old and often rather damp walls such as canal and river banks, retaining walls, railway bridges and ha-has: J. Babington (in Plymley 1803) recorded it 'on the wall of a sunk fence that divides the pleasure-grounds of Bitterley Court from the road.' It is also found on dry stone walls such as those at Loton Park.



### *Asplenium ceterach* L.

#### Rustyback

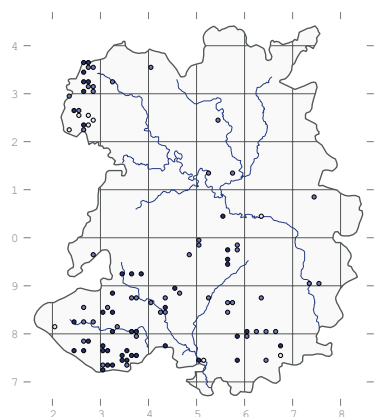
Native. Local. Stable. Walls and limestone rocks.

First record: J. Babington, 1789, 'on some walls in Ludlow, where it flourishes very much. I never saw it growing in any other part of Shropshire.'

A highly oceanic plant, reaching the edge of its range in south and west Shropshire. It is found mostly on old walls in humid places but sometimes it occurs on natural rock outcrops and limestone scree. It used to grow on the cliffs at Blodwel Rocks (Salwey, 1855) where W. Whitwell (1865) described it as 'abundant and very fine,' but it was probably much reduced by Victorian collectors and it was last seen there by A.M. Stirling in 1973. It does, however,



still grow on block scree in one place on Llynclys Hill (J. Pedlow, 2002). It can be long-lived on walls. At Cound, for instance, it was first recorded by G.M. Furley in 1922 and it is still there (D.H. Wrench, 2007).



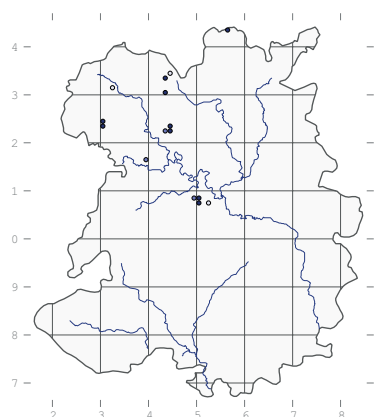
## Thelypteridaceae

### *Thelypteris palustris* Schott Marsh Fern

Native. Scarce. Decreasing. Axiophyte: wet woodland.

First record (as *Aspidium thelypteris*): Williams, c. 1800, Top Pool, Berrington.

Largely restricted to W5 *Alnus glutinosa* woodland in places like Morton Pool, Sweat Mere and Oss Mere, just about persisting in the drained form of W5 that is closer to W6 *Salix* × *fragilis* at Morton Pool. It used to occur in what was probably M22 *Juncus subnodulosus* at the Yesters (Sinkers, 1965) and in meadows near Fenemere (F. Rose, 1959 – Whild, 1996), but it has not been seen at either site recently. The biggest populations are at Shomere Pool and Sweat Mere, but even they are just patches a few metres across. None of its current sites is easily accessible to the public.



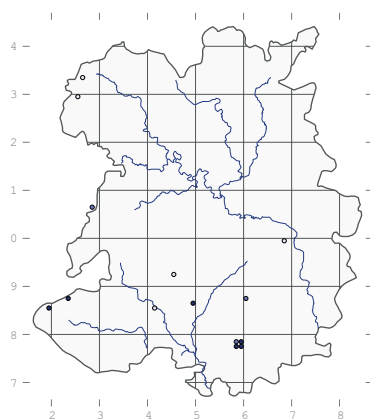
### *Phegopteris connectilis* (Michx.) Watt

#### Beech Fern

Native. Rare. Decreasing. Axiophyte: rock outcrops.

First record: T. Salwey, 1836, Craig Forda (SHY).

There are just four current sites: Titterstone Clee, where it was first recorded by G. Jordan in 1838 and it is still present in several places (SO597778, J. Clayfield, 2005); Dolfawr (SO234874, Clayfield, 2008); Hazeldine Coppice (SO495868, A. Ashwell, 2002); and Riddings (SO1985, Clayfield, 2011).



### *Oreopteris limbosperma* (Bellardi ex All.) Holub

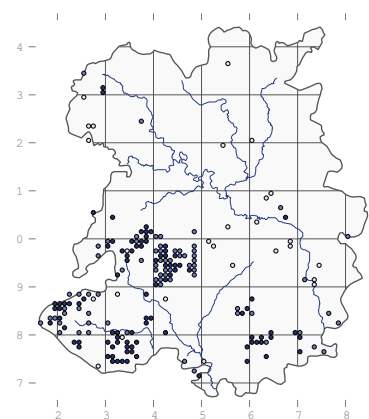
#### Lemon-scented Fern

Native. Local. Decreasing. Axiophyte: upland streams, grassland and woodland.

First records (as *Aspidium oreopteris*): Williams, c. 1800, 'by the side of the road up the hill from Causeway Wood to Chatwall; on the Wrekin; on Shineton Common; Shawbury Heath; on Cound Moor'.

By the sides of upland streams, often in M23 *Juncus effusus* in places such as the batches on the Long Mynd and in MG5 *Festuca rubra* alongside. Also in moorland on the Stiperstones. It is much less common and in decline in the lowlands. At Old Oswestry it is very rare in open W10 *Quercus robur* woodland on the north-east ramparts (first recorded by J.A. Thompson in 1995) although the vegetation there shows signs of having been W16 *Q. petraea* before it was cleared in the 1970s. In the past it used to occur in lowland heaths such as Ellerdine Common (R. Anslow, 1877), Prees Heath (A.H. Wolley-Dod, 1901) and Shelvock (E.D. Pugh, 1981). It has mostly gone from the north and east of the county, but there is still an outlying population in heathland

at Dale Coppice. It is usually found on acid substrates, but there are old records of it around Llanymynech Hill (e.g. Crickheath Hill, G.R. Jebb, 1877). Good places to look for it include Hope Bowdler and Hopesay Hill, or anywhere on the Stiperstones or Long Mynd. It is surprisingly rare on Titterstone Clee, where it was first recorded by G. Jordan in 1856, 'among the basaltic columns around the summit of the mountain' although it now seems to have gone from there, and it is only found around the streams and flushes on the middle slopes.



*Oreopteris limbosperma* at Old Oswestry



*Asplenium trichomanes* at Moelydd

## Woodsiaceae

*Athyrium filix-femina* (L.)

Roth

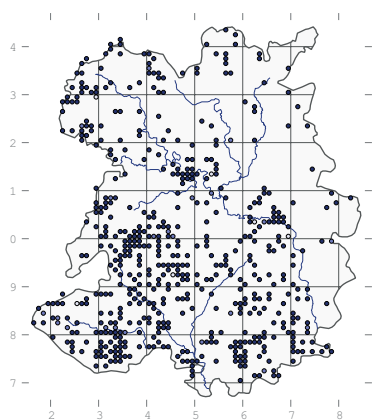
## Lady Fern

Native. Widespread. Stable. Woodland, stream sides and flushes.

First records: Brown, c. 1726, Bishops Castle and Combe Floyd [possibly Cwm Frydd].

In wet places, usually on slopes and stream sides where the ground is moist but there is some drainage. It is often quite rare, with just occasional plants along a stream side in a wood or the edge of a ditch in a drained mire, but it can be quite abundant in upland sites such as north-facing slopes on the Stiperstones at Upper Vessons. It is most often recorded in woodlands, being ubiquitous (but rarely abundant) in stands of W5 *Alnus glutinosa*, W6 *Salix × fragilis* and W7 *Lysimachia nemorum*; occasional in W8 *Fraxinus excelsior* in places like Birchen Park and Limekiln Wood (Trueman, 1981); in W9 *Sorbus aucuparia* in Betchcott Hollow; and sometimes in W10 *Quercus robur* woods such as Bannister's Coppice and Haughmond Hill.

It is also common in swamps such as S3 *Carex paniculata* at Sweat Mere (B. Wheeler, 1986); S17 *C. pseudocyperus* at Oxon Pool; and S26 *Phragmites australis* at Marton Pool, Chirbury and Oss Mere.

*Gymnocarpium dryopteris*

(L.) Newman

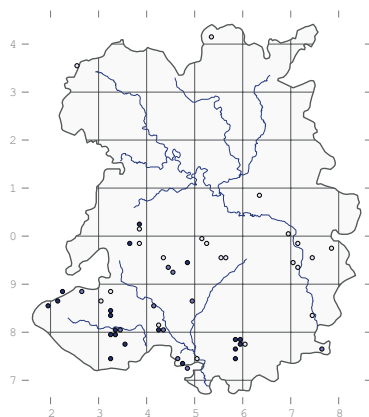
## Oak Fern

Native. Local. Increasing. Axiophyte: woods, moorland.

First record: L. Brown, 1726, Bishops Castle.

Typically on a north-facing slope above a stream, under bracken or in light woodland. At the summit of Titterstone Clee it occurs amongst the basalt boulder scree, and on the

Stiperstones it grows amongst quartzite scree beside the ridge path between Manstone Rock and Cranberry Rock, where it was first found as recently as 2002 (D.H. Wrench). At Upper Vessons it grows on a damp cliff face above the Habberley brook. There have been several populations found since Sinker's Flora, and it no longer appears so rare or declining.

*Gymnocarpium robertianum* (Hoffm.)

Newman

## Limestone Fern

There is only one record: on the bridge over the river Morda in Oswestry in 1864 (W. How), but the plant was subsequently collected by a florist. Griffiths's (1870) record for Cheney Longville and Painter's (1908) one for Stoke Wood were probably errors for *G. dryopteris*.

*Cystopteris fragilis* (L.)

Bernh.

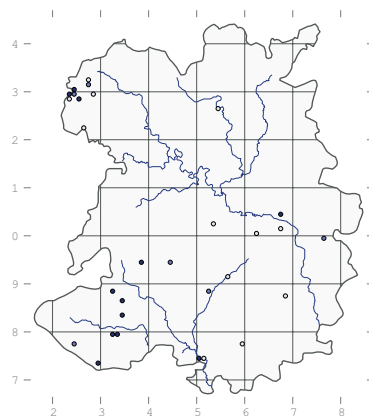
## Brittle Bladder-fern

Native. Local. Stable. Axiophyte: base-rich rocks, old walls.

First record: Leighton, 1840, Blodwel Rock (SHY).

On limestone and other base-rich rock exposures in humid, shady situations, sometimes by streams and near waterfalls. It also grows on old limestone walls. The best site in Shropshire is at Craig-y-rhiw (first recorded by J.R. Jebb in 1877), where there are many plants on Carboniferous Limestone exposures. It was last seen at Blodwel Rock in 1864 (W. Whitwell). Other good sites are Cwm near Clunbury, where it was first recorded by W. Phillips in 1882, and Whitcliffe, where A. Marston recorded it in 1870 and it was still present in 1996, by the waterfall at the bottom of the cliffs. Elsewhere it is a wall plant, growing in places such as the porch of Bishops Castle church and dry stone walls in Candy Valley.

A possible early record by L. Brown, on the Stiperstones, c. 1725, is rejected by Oswald (1985) as an erroneous translation by G.C. Druce. G. Jordan (c. 1856) claimed to have seen it 'amongst the basaltic columns' on Titterstone Clee, but no-one else has ever recorded it there. It has twice been recorded 'in the valley of the Longmynd' (Carding Mill Valley) (H. Pearce, 1867 & L.G. Payne, 1939) and could possibly turn up there again.



## Blechnaceae

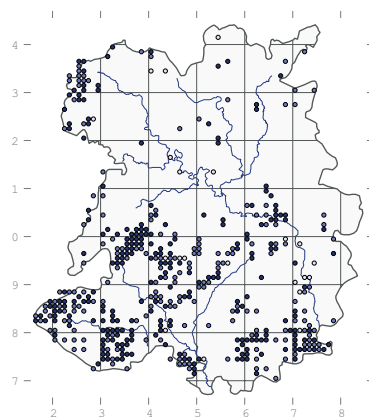
*Blechnum spicant* (L.) Roth

## Hard Fern

Native. Local. Decreasing. Axiophyte: acid woodland and heath.

First record (as *B. boreale*): Williams, c. 1799, Shawbury Heath.

Characteristic of neutral to acid woodland, in W10 *Quercus robur* woods at Benthall Edge (Trueman, 1981); W16 *Q. petraea* at Oaks Wood; and W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood; and in heaths such as H12 *Vaccinium myrtillus* at Nipstone Rock and Rhos Fiddle. It is also occasional in more base-rich sites, in W8 *Fraxinus excelsior* woods such as Blakeway Coppice and W9 *Sorbus aucuparia* at Betchcott Hollow. It appears to be declining in lowland sites but it is still frequent in the uplands.



***Blechnum penna-marina***

(Poiret) Kuhn

**Little Hard-fern**

A few plants on Wild Moor (SO424965, F.J. Rumsey, 2007) in a stand of M23 *Juncus effusus* – the first time this antipodean fern had been found growing in the wild in Britain (it was previously known only on a wall in London). This attracted the attention of fern hunters, and it appeared to diminish over the next couple of years, so it may not have survived. It is widely available in garden centres.

**Onocleaceae*****Matteuccia struthiopteris***

(L.) Tod

**Ostrich Fern**

Neophyte. Rare. Stable. By streams.

First record: W.E. Hutton, 1972, Badger Dingle.

Naturalised by a stream in Rectory Wood (SO448939), where it was first recorded by H.M. Davidson in 1976. It is still there, and it may still be in Badger Dingle although there are no recent records.

***Onoclea sensibilis* L.****Sensitive Fern**

Planted. Rare. Casual. Gardens.

A garden fern which is occasionally planted out in the wild, but it rarely persists. It was recorded by Melvill in Badger Dingle in 1913 and 1914, but not since.

**Dryopteridaceae*****Polystichum setiferum***

(Forsk.) Moore ex Woynar

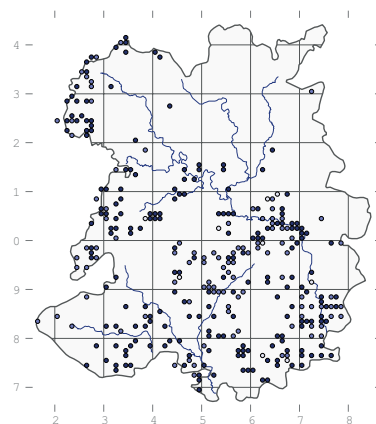
**Soft Shield-fern**

Native. Local. Increasing. Axiophyte: woodland and hedge-banks.

First record: Leighton, 1840, Blodwel Rock (SHY).

Largely confined to W8 *Fraxinus excelsior* woodland and hedgerows of similar vegetation, on base-rich soils and usually at least moderately steep slopes. Sometimes it occurs as a few individuals by a roadside ditch (e.g. along Catsbitch Lane at Waters Upton) but usually it is quite a good ancient woodland indicator, especially if present in any quantity. It does colonise new woodland in limestone quarries such as Llynclys Quarry (P. Parker, 1992) and Dolgoch Quarry

(A.K. Thorne, 2006). Good places to see it include Benthall Edge wood and Blakeway Coppice. There is some evidence for a slight increase in recent decades, as woods have expanded.

***Polystichum × bicknellii***(Christ) Hahne (*setiferum* × *aculeatum*)

Native. Local. Stable. Deciduous woods.

First record: Lockton, 2006, Lyd Hole (SJ462093, conf. F.J. Rumsey, BM).

Occasional in suitable habitats, not necessarily with both parents present in the immediate vicinity. It also occurs in W8 *Fraxinus excelsior* woodland at Redhill Coppice; in the hedgerow along the lane to Mitnell Farm, Richards Castle; and at Whitbatch.

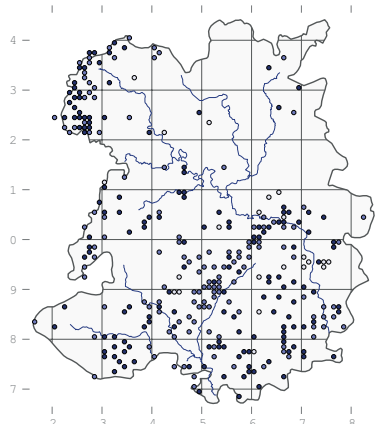
***Polystichum aculeatum* (L.)**

Roth

**Hard Shield-fern**

Native. Local. Stable. Axiophyte: calcareous woodland.

First record: Williams, c. 1800, 'shady lanes.'



Like *P. setiferum* this is a calcicole but it is more widespread and it has slightly different habitat preferences. The two sometimes occur together, but not always. *P. aculeatum* seems to tolerate a wider range of conditions, including both lower and higher base-richness and higher light levels. It is recorded

in W8 *Fraxinus excelsior* woodland at Knowle Wood and New England, and is largely confined to this habitat. Sometimes it is recorded in limestone quarries such as Pant Quarry (A.K. Thorne, 2006). A good place to see it is on Blodwel Rocks, where it was first recorded by Leighton in 1840 (SHY).

***Cyrtomium fortunei* J. Sm.****Fortune's Holly-fern**

Neophyte. Self sown, high on a wall in Drinkwater Street, Mountfields, Shrewsbury, in 2008 (SJ487130, P. Reade, det. F.J. Rumsey, BM).

***Dryopteris oreades* Fomin****Mountain Male Fern**

Native. Rare. Stable. Axiophyte: boulder scree.

First record: Sinker, 1962, 'on the north slope of Titterstone Clee, just below the rampart' (SJ592780, SHY).

There are two plants known on the boulder scree on Titterstone Clee (J. Bingham, 2011) and one on the scree at Earl's Hill (SJ410048, Whild, 2002), which makes it one of the rarest species in the county. On Clee Hill it grows in heathland at 485 m, whereas on Earl's Hill it grows in the loose Dolerite scree below the cliffs at about 280 m.

***Dryopteris filix-mas* (L.)**

Schott

**Male Fern**

Native. Widespread. Stable or increasing. Woods, hedges, walls, etc.

First record: Williams, c. 1800, 'hedges, common.'

Very common in hedges and all woods, and even in moorland on the Stiperstones and Titterstone Clee, where it is found in the shelter of dry stone walls and on rock scree. Small plants are occasional on walls or protruding from the stonework in the embankments of rivers and canals. During the war, children used to collect its roots under the direction of botanist R.W. Butcher, of the Ministry of Supply's Herb Committee, to provide a home-grown cure for tapeworm.

It is mainly found in woods and hedgerows in communities such as W4 *Betula pubescens* at Shomere Pool; W5 *Alnus glutinosa* at Morton Pool (D.H. Wrench, 1991); W6 *Salix × fragilis* at Hencott Pool, Haughmond Hill and elsewhere; W7 *Lysimachia nemorum* at Fastings Coppice and Limekiln Wood (Trueman, 1981); in all stands of W8 *F. excelsior* throughout; W9 *Sorbus*



*aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Bannister's Coppice, Snailbeach Coppice and elsewhere; W16 *Q. petraea* in Sowdley Wood, Oaks Wood and Poles Coppice; W17 *Leucobryum glaucum* at Oaks Wood; W21 *Crataegus monogyna* scrub on Earl's Hill; and W24 *Rubus fruticosus* hedgebanks at Mellin-y-Grogue, Pentre Hodre and Stevenshill.

Elsewhere it has been recorded in a range of habitats such as M23 *Juncus effusus* at Upper Darnford (R. Tapper, 1983); S26 *Phragmites australis* at Marton Pool, Chirbury (M.J. Wigginton, 1979); and U1 *Rumex acetosella* on Earl's Hill.



*Gymnocarpium dryopteris*  
(Dan Wrench)



*Dryopteris carthusiana* at Brown Moss

## *Dryopteris* × *complexa*

Fraser-Jenkins (*D. filix-mas* × *affinis* agg.)

### Hybrid Male Fern

Native. Local. Scattered. Stable.

First record: B.A. Thomas (det. G. Hutchinson, NMW), 1989, 'wood near Tyn-y-coed, Candy Valley'.

This is an aggregate, being a cross between male fern and any of the scaly male fern species, probably *affinis* or *borreri* most of the time, as they are the commonest. It is not all that uncommon, especially in the hills where the *affinis* agg. is more frequent, but it is rarely recorded. One large plant in a ditch in a forestry plantation on Haughmond Hill in 2006 (det. F.J. Rumsey & A.C. Pigott, BM) is *filix-mas* × *borreri*, and there is a range of plants by the stream at the base of Earl's Hill and in a quarry on Pontesford Hill (Pigott, 2006) which probably involve various taxa. It has also been recorded on the Wrekin (M.J. Stribley, 2010).

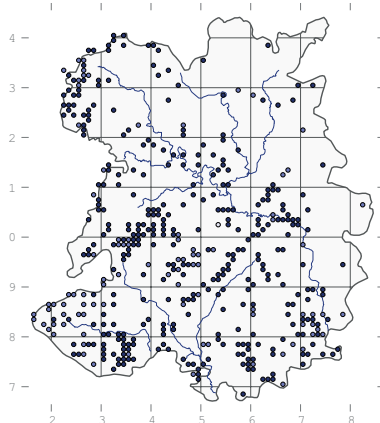
## *Dryopteris affinis* (Lowe)

Fraser-Jenk.

### Golden-scaled Male Fern

Native. Local. Stable. Axiophyte: woods, hedgebanks.

First record (as *D. borreri*): G. Maw, 1855, near Broseley (det. J.P. Pugh, ABD, K, NWH).



Largely restricted to ancient woods, including W8 *Fraxinus excelsior* in places like Knowle Wood and along the Borle Brook at New England, and W10 *Quercus robur* such as Bannister's Coppice and on the Ercall. Sometimes it persists in old hedges or colonises quarries and walls in or adjacent to such woods. It favours areas of high rainfall and high humidity.

Most plants are ssp. *affinis* but ssp. *paleaceolobata* (T. Moore) Fraser-Jenk. has been recorded at the Old River Bed, Shrewsbury (A.C. Pigott, 2008). In the past it has rarely been differentiated from *D. borreri*, which is

the more lowland plant, although both are found at any altitude in the county. The map here is therefore of *D. affinis* sens. lat., which includes the following two species. A good place to see *D. affinis* ssp. *affinis* is on Pontesford Hill, in an old quarry close to the car park.

## *Dryopteris cambrensis*

(Fraser-Jenk.) Beitel & W.R. Buck

### Narrow Male Fern

Native. Local. Stable. Axiophyte: woods and hedgebanks.

A large, more upland fern in areas of high rainfall and humidity. It is more frequent on the Stiperstones, especially in Tankerville Hollow, where it grows on walls and in an old quarry (A.C. Pigott, 2007). It has also been recorded on Black Rhadley, Grinshill Hill (A.C. Jermy, 1999), in Hope Valley, Nesscliffe Hill (Jermy, 1999), Loamhole Dingle and Titterstone Clee (Jermy, 1998). The best place to see it is on walls by the road in Tankerville.

## *Dryopteris borreri* (Newman)

Newman ex Oberh. & Tavel

### Borrer's Scaly Male Fern

Native. Local. Stable. Woods and hedges.

The more lowland of the scaly male-ferns, with a sprawling habit, duller leaves and fewer scales; sometimes difficult to distinguish from *D. filix-mas*. It is also the most common, being widespread in woods in the lowlands. However, old records do not often separate it from *D. affinis* and its range encompasses that of the other taxa, so we cannot separate records ecologically or geographically. A good place to see it is on Haughmond Hill, especially in Haughmond Abbey woods (A.C. Pigott, 2006). It has also been recorded at Bury Ditches, on the Stiperstones, in Hope Valley, Loamhole Dingle, at the Mere, Titterstone Clee and elsewhere.

## *Dryopteris aemula* (Aiton)

Kuntze

### Hay-scented Buckler-fern

Formerly in one place in Coalbrookdale, near Loamhole Pool (W.P. Brookes, 1855, MHWK), where it was also collected by G. Maw in 1855 and possibly by J. Hayes in c. 1858.

## *Dryopteris* × *uliginosa* (A.

Braun ex Döll) Kuntze ex Druce (*D. cristata* × *carthusiana*)

A specimen at HLU, collected by G. Maw in 1854, is labelled 'Boggy

heath, Shirlett.' Another one at BM (E. Newman, 1864, det. J.M. Mullin) has an almost identical label. It is not quite apparent where the boggy heath might have been. *D. cristata* is a rare plant of base-rich mires and was once known on some of the mosses in Staffordshire and Cheshire.

***Dryopteris carthusiana***  
(Vill.) H.P. Fuchs

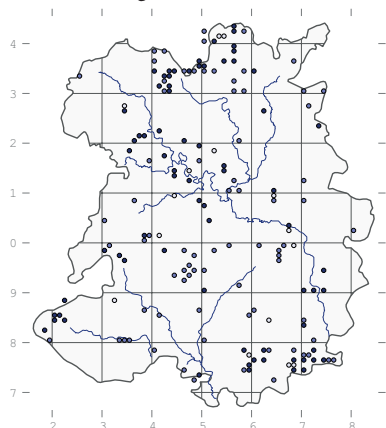
**Narrow Buckler-fern**

Native. Local. Stable. Axiophyte: bogs and peaty woodlands.

First record (as *Lastrea spinulosa*):  
Leighton, 1834, Shomere (SHY).

Restricted to peaty soils, from acid raised bogs and base-rich lowland fen to upland flushes. It is found in M2 *Sphagnum fallax* lawn at Lin Can Moss; M23 *Juncus effusus* at Balmer Heath and the Mere at Ellesmere (Trueman, 1981); M25 *Molinia caerulea* at Steel Heath and Black Coppice; and in both M27 *Filipendula ulmaria* and S27 *Comarum palustre* at the Moors, Ellesmere.

In woods it is most common in W4 *Betula pubescens* in places like Bomere Pool, Lin Can Moss, Shomere Pool and Wem Moss; but it also occurs in W5 *A. glutinosa* at Oss Mere; W6 *Salix* × *fragilis* at the Mere; and W10 *Quercus robur* on Haughmond Hill.



***Dryopteris* × *deweveri*** (J.T. Jansen) Wacht. (*D. carthusiana* × *dilatata*)

**Hybrid Buckler-fern**

Native. Local. Stable. Damp woodland.

First record: Lockton, 1998, The Moors, Ellesmere (conf. A.C. Jermy, BIRM).

On drying or wooded mires and plantations on former mires where conditions are becoming unsuitable for *D. carthusiana*. It is abundant in W4 *Betula pubescens* woodland on Whixall Moss (F.J. Rumsey, 2004), and it also grows in W10 *Quercus robur* woodland at Brown Moss, Caynton Gorse and

Chorley Covert. In the latter site it is exceptionally abundant and may be the commonest fern in parts of the wood.

***Dryopteris dilatata*** (Hoffm.)  
A. Gray

**Broad Buckler-fern**

Native. Widespread. Stable. Woods, hedges, moorland, drained mires.

First record (as *Aspidium dilatatum*):  
Williams, c. 1800, Frodesley Hill.

In a wide range of habitats on neutral to acid soils, but most abundant in woods, where it often grows on rotting stumps or tree bases, especially in the wetter sites. It is recorded in W1 *Salix cinerea* carr at Calcott Moss; W4 *Betula pubescens* at Bomere Pool, Haughmond Hill, Lin Can Moss and Sweat Mere (Trueman, 1981); in most stands of W5 *Alnus glutinosa* and W6 *Salix* × *fragilis* woodland; W7 *Lysimachia nemorum* at Birchen Park, Brook Vessons and elsewhere; W8 *Fraxinus excelsior* throughout; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* on the Ercall (Trueman, 1981), at Prees Heath and many other places; W16 *Q. petraea* at Oaks Wood, Sowdley Wood and elsewhere; and W17 *Leucobryum glaucum* at Oaks Wood (A.J. Barker, 2004).

It is less often recorded in more open habitats, but there are records of it in H12 *Vaccinium myrtillus* heath on the Stiperstones; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* at Newton Mere; OV26 *Epilobium hirsutum* at Betton Pool; S4 *Phragmites australis* at Sweat Mere; S6 *Carex riparia* at Blake Mere; and S27 *Comarum palustre* at Berrington Pool (the last 4 by Wigginton, 1979). At Oss Mere it also occurs in S26 *Phragmites australis* swamp and at Perkins Beach it is a component of the U20 *Pteridium aquilinum* vegetation. Although it is vulnerable to grazing, it grows on old walls and amongst rock scree in moorland at the summit of both the Stiperstones and Titterstone Clee.



**Polypodiaceae**

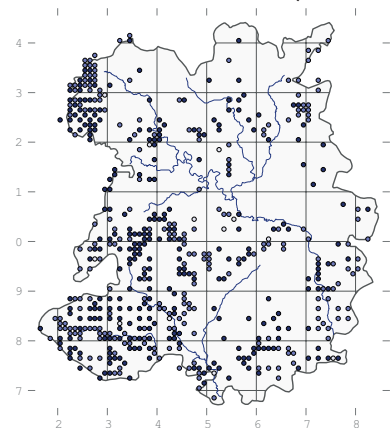
***Polypodium vulgare* L.**

**Polypody**

Native. Widespread. Stable. Walls, hedges, rock outcrops, trees.

First record: Williams, c. 1800, 'walls and stumps of trees, common.'

On neutral to acid substrates such as rock outcrops and dry stone walls. It is quite common in the hills, sometimes growing as an epiphyte either on the bases of trees in hedges or on the branches. At Park Hall, Whittington it grows on willows in carr woodland, and it has been recorded on the lock walls in the Newport Canal, showing how it favours humid places but a dry substrate. Because it often grows on rocks and trees, it is often only incidental to any vegetation community, and there is little information on its associations. At Pentre Hodre it grows on roadside hedge-banks in W24 *Rubus fruticosus* under-scrub. There is much confusion between this species and *P. interjectum*, and it is not obvious how many people successfully discriminate between them. Habitat and frond shape are useful features, but microscopic examination is often necessary.



***Polypodium* × *mantoniae***  
Rothm. (*P. vulgare* × *interjectum*)

**Manton's Polypody**

Native. Rare. Stable. Cliffs.

Forming vigorous clumps on rock outcrops and cliffs, probably not all that rare, given that both parents are common in the county and can often be found in proximity to each other. However, there are currently just two confirmed records, from Llyncllys Hill (Lockton, 1998, conf. F.J. Rumsey, BM) and Grinshill Hill (F.J. Rumsey, 1999, BIRM).



## Vascular plants

### *Polypodium interjectum*

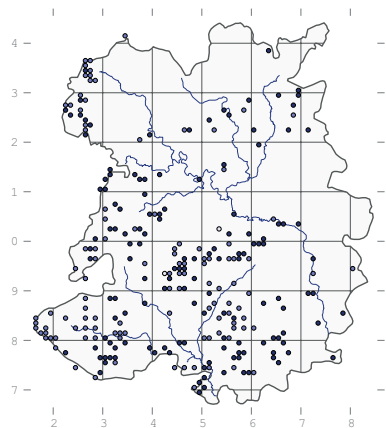
Shivas

#### Intermediate Polypody

Native. Widespread. Stable. Rocks, walls, quarries, hedgebanks.

First record: R.M. Serjeantson (det. F.H. Perring), 1879, Acton Burnell (SHY).

Typically on more base-rich substrates than *P. vulgare*, often on old walls or limestone cliffs. Many of its sites are in W8 *Fraxinus excelsior* woodland, as at Benthall Edge or Craig Sychtyn, but others are largely devoid of other vegetation, such as the garage roof on Town Walls, which is the only recorded site for it in Shrewsbury. A good place to look for it is along Wenlock Edge, where it is the commoner Polypody, but it is also frequent in the hills in the southwest. Although it is more widely recorded now than in Sinker's Flora, there has probably been little real change. Errors of identification are still common, and records should really be supported by voucher specimens.



### *Polypodium cambricum* L.

#### Southern Polypody

Native. Rare. Stable. Axiophyte: limestone cliffs.

First record: J.H. Chandler (conf. A.C. Jermy), 1961, Blodwel Rock.

Still present at Blodwel Rock (SJ268232, 2011) and also recorded on walls at Ludlow Castle (R.H. Roberts, 1973), in Norbury (A.R. Busby, 1972) and in Middleton (P.R. Green, 2009).

## Gymnosperms

### Ginkgoaceae

#### *Ginkgo biloba* L.

##### Ginkgo

Occasional in gardens; rarely if ever planted in the wild. Recorded by Perring at Attingham Park in 1969.

### Pinaceae

#### *Abies alba* Mill.

##### European Silver-fir

Neophyte. Planted. Rare. Mixed woodland

In mixed woodland at Craig-y-rhiw (A.K. Thorne, 2010).

#### *Abies grandis* (Douglas ex D. Don) Lindley

##### Giant Fir

Neophyte. Scattered. Planted. Estates and forestry plantations.

First record: Perring, 1973, Attingham Park.

Occasional in plantations in places like Clunton Coppice, Pontesford Hill and Soudley Wood.

#### *Abies procera* Rehder

##### Noble Fir

Neophyte. Planted. Rare. Plantations.

Occasional in forestry plantations. Recorded on Black Rhadley and Nesscliffe hills (A.K. Thorne, 2000-2001).

#### *Pseudotsuga menziesii*

(Mirbel) Franco

##### Douglas Fir

Neophyte. Widespread. Increasing. Forestry plantations and gardens.

Frequently planted and often reproducing from seed, as at Oaks Wood (Sinker & Perring, 1966). It is also planted as a specimen tree in gardens and churchyards such as Lydham (S. Kingsbury, 1996).

#### *Tsuga heterophylla* (Raf.) Sarg.

##### Western Hemlock

Neophyte. Scattered. Increasing. Plantations and country estates.

A forestry tree, sometimes planted in large stands but more often used in mixed plantings. Seedlings are common in all but the darkest woods, and are frequent along tracks and brooks in woods. It is also recorded in mine waste restoration projects, as at The Bog (A.K. Thorne, 2001), and in churchyards such as Lydham (S. Kingsbury, 1996).

### *Picea sitchensis* (Bong.)

Carriere

#### Sitka Spruce

Neophyte. Scattered. Increasing. Plantations.

A commonly planted forestry tree, often planted in dense stands.

### *Picea omorika* (Pancic) Purkyne

#### Serbian Spruce

Neophyte. Planted. Rare. Plantations.

A few trees in a plantation on Haughmond Hill (M.G. Hoare, 2006).

### *Picea abies* (L.) Karsten

#### Norway Spruce

Neophyte. Widespread. Increasing. Forestry plantations.

First records: E.S. Cobbold, 1904, 'in many woods about Church Stretton, All Stretton and Marshbrook'.

One of the more popular forestry trees, often regenerating from seed. It is recorded in W4 *Betula pubescens* woodland at Shomere Pool (M.J. Wigginton, 1979); W10 *Quercus robur* on Haughmond Hill; and W17 *Leucobryum glaucum* in Oaks Wood (A.J. Barker, 2004).

### *Picea glauca* (Moench) Voss

#### White Spruce

Neophyte. Planted. Rare. Mixed woodland.

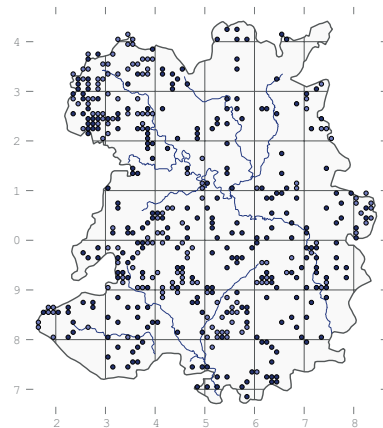
One tree by a stream at the Bog (SO345978, A.K. Thorne, 2001).

### *Larix decidua* Miller

#### Larch

Neophyte. Widespread. Stable. Forestry plantations.

Widely planted in forestry, as on Pontesford Hill, and sometimes self-sown. Recorded in W10 *Quercus robur* woodland in Hope Coppice and Snailbeach Coppice.





***Larix × marschlinsii* Coaz**  
(*decidua* × *kaempferi*)**Hybrid Larch**

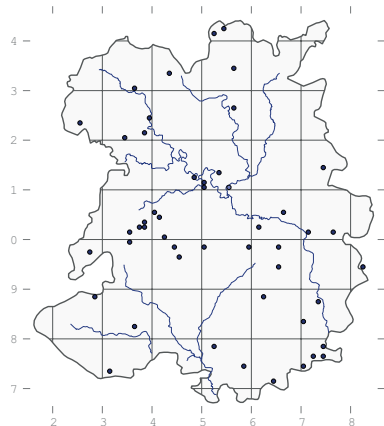
Neophyte. Planted. Occasional.  
Plantations.

Occasional in forestry plantations  
throughout.

***Larix kaempferi* (Lindley)**  
Carriere**Japanese Larch**

Neophyte. Planted. Occasional.  
Plantations.

Occasional in forestry plantations  
throughout.

***Cedrus deodara* (Roxb. ex D. Don) Don****Deodar**

Neophyte. Planted. Occasional.  
Plantations and gardens.

Planted on country estates, in gardens and churchyards and occasionally in forestry, as on Haughmond Hill (SJ544142) where it helps to break the tedium of the plantations.

***Cedrus libani* A. Rich.****Cedar of Lebanon**

Neophyte. Planted. Occasional. Estates, churchyards, gardens.

Planted on country estates, in churchyards and in gardens. There are some fine specimens at Attingham Park.

***Cedrus atlantica* (Endl.)****Carriere****Atlas Cedar**

Neophyte. Planted. Occasional. Estates, churchyards, gardens.

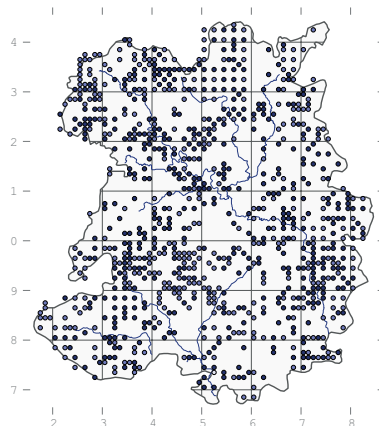
Occasionally planted in churchyards and on country estates. The variety 'glauca' is planted in the garden of the old rectory, Church Pulverbatch (A.K. Thorne, 2000).

***Pinus sylvestris* L.****Scots Pine**

Neophyte. Widespread. Stable. Woods, hedges, gardens, country estates.

First record: Williams, c. 1800, 'hedges.'

Well established on peat bogs and some heaths and woods. It is recorded in H12 *Vaccinium myrtillus* heath at Nipstone Rock; M2b *Sphagnum fallax* mire at Lin Can Moss; M16 *Sphagnum compactum* on Hodnet Heath; W4 *Betula pubescens* woodland at Lin Can Moss, Shomere Pool (M.J. Wigginton, 1979) and Wem Moss; W6 *Salix × fragilis* at Holly Coppice and Sweat Mere (Packham, 1970); W8 *Fraxinus excelsior* on Haughmond Hill; W10 *Quercus robur* at Cole Mere, Haughmond Abbey Wood and the Mere; and both W16 and W17 *Leucobryum glaucum* at Oaks Wood (A.J. Barker, 2004).

***Pinus nigra* Arnold****Austrian Pine**

Neophyte. Scattered. Increasing. Woods, roadsides, gardens, parks.

First record: H.M. Auden, 1907, Condover.

Widely planted as a forestry or landscape tree. There are some fine specimens by The Slang in Shrewsbury. Corsican Pine, *P. nigra* ssp. *laricio* Maire, has been recorded on Pontesford Hill, in Lily Wood and at Walcot Park (P.G. Green, 2005).

***Pinus contorta* Douglas ex Loudon****Lodgepole Pine**

Neophyte. Planted. Widespread. Plantations.

Widely planted as specimen trees or occasionally in forestry plantations. There are recent records for Rabbit Hill Wood, Pimhill (D. Buckingham, 2000), the Stiperstones, Pontesford Hill, Maws Meadow, etc (all A.K. Thorne, 2001+). Self-sown saplings have been seen at

Nipstone Rock and The Bog (both Thorne, 2001).

***Pinus radiata* D. Don****Monterey Pine**

Neophyte. Planted. Rare. Hedges.

Many large trees in a hedge at Church Pulverbatch (SJ431029, A.K. Thorne, 2000).

***Pinus strobus* L.****Weymouth Pine**

Neophyte. Planted. Occasional. Parks and gardens.

In parks and gardens. Sidbury Church (J.A. Thompson, 1998).

**Araucariaceae*****Araucaria araucana***

(Molina) K. Koch

**Monkey-puzzle**

Neophyte. Planted. Rare. Parks, gardens and plantations.

A South American tree often planted in gardens, but rarely in the wild or in forestry. The only place where it is recorded apart from ornamental plantings is at Black Rhadley (S.A. Ellis, 1985; A.K. Thorne, 2000).

**Taxaceae*****Taxus baccata* L.****Yew**

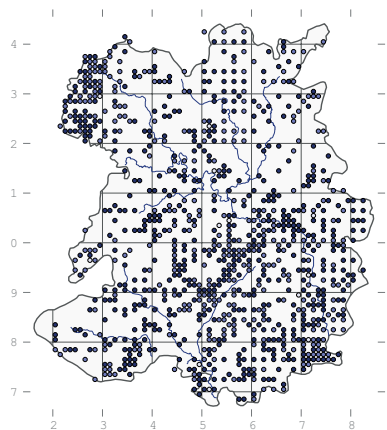
Native. Widespread. Increasing. Woods, hedges, churchyards and gardens.

First records: Williams, c. 1800, 'on Wenlock Edge near Lutwyck; by the side of Pitchford Brook, etc; below Pimley; Wrekin.'

Typical of calcareous woods, particularly W8 *Fraxinus excelsior* in places like Blodwel Rock (Trueman, 1981), Limekiln Wood, Oaks Wood, the Novers and White Mere; but also recorded in W6 *Salix × fragilis* woodland at Cole Mere; W7 *Lysimachia nemorum* at Limekiln Wood (Trueman, 1981); W10 *Quercus robur* at Muxton Bridge (Trueman, 1981); and W16 *Q. petraea* at Oaks Wood. At Jones's Rough it occurs in a dense stand of what could be described as W13 *T. baccata* woodland, but this was apparently created quite recently by the selective removal of other trees. Although the foliage is toxic to cattle, it is occasional in field hedges throughout the county, especially so around the base of the Lawley. It is also widely planted in garden hedges and of course in

## Vascular plants

churchyards. Weeping, fastigate and coloured varieties are widely planted but do not seem to naturalise.



## Cupressaceae

***Sequoia sempervirens***  
(Lambert) Endl.

Coastal Redwood

Neophyte. Planted. Occasional. Parks, gardens and mixed woodland.

Planted in parks and gardens, and occasionally in woods as in Easthope Wood, where there is a very large old tree, and a wood at Woodhouse, Hopton Wafers (P.R. Green, 2009).

***Sequoiadendron giganteum***  
(Lindley) Buchholz

Wellingtonia

Neophyte. Planted. Occasional. Parks, gardens and plantations.

Planted in parks and gardens as at the Mere, and sometimes in forestry plantations such as Pontesford Hill and Woodhouse, Hopton Wafers (P.R. Green, 2009).

***Cryptomeria japonica*** (L.f.)  
D. Don

Japanese Red-cedar

Naturalised in woodland at Coed-detton (1999, BIRM).

***Cupressus macrocarpa***  
Hartweg ex Gordon

Monterey Cypress

Planted at Attingham Park (Perring, 1969).

× ***Cuprocyparis leylandii***  
Farjon (*Chamaecyparis nootkatensis* × *Cupressus macrocarpa*)

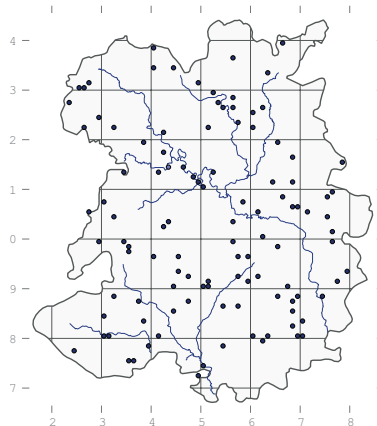
Leyland Cypress

Widespread in garden hedges and sometimes planted in woods as pheasant cover.

***Chamaecyparis lawsoniana***  
(A. Murray) Parl.

Lawson's Cypress

Widely planted in woods, gardens and parks.



***Chamaecyparis pisifera***  
(Siebold & Zucc.) Siebold & Zucc.

Sawara Cypress

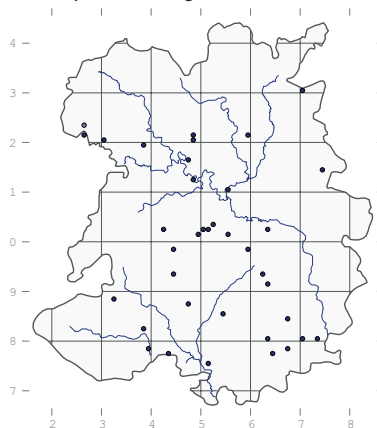
Neophyte. Planted. Occasional. Parks and gardens.

Occasional in parks and gardens, as at Little Dawley Church (J.A. Thompson, 2000).

***Thuja plicata*** Donn ex D. Don  
Western Red-cedar

Neophyte. Planted. Widespread. Plantations, mixed woodland, churchyards.

In W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981) and subsequently in forestry plantations, churchyards throughout.



***Juniperus communis*** L.

Juniper

Native. Rare. Last recorded in 1856. Woods and grassland.

First records: W.G. Perry & G. Jordan, 1841, Wyre Forest.

Surviving in a few places in the county until historical times, most notably in

the Wyre Forest, where it was recorded in several places in the early 19<sup>th</sup> century, and there is a specimen in SHY (attributed to Leighton) to support this. Given its rarity, the records by Mary McGhie in Leighton's Flora, for 'woods near Burford, Ashford Carbonel and Ludlow' are surprising but not impossible. The undated and anonymous report in Diamond's (1891) Flora of Oswestry for Carreg-y-big and Caignant are similarly unsubstantiated. A cautious approach would be to treat only the Wyre Forest records as correct.

***Juniperus chinensis*** L.

Chinese Juniper

Neophyte. Planted. Rare.

Planted in Acton Scott churchyard (J.A. Thompson, 2000, BIRM).

***Juniperus virginiana*** L.

Neophyte. Planted. Rare.

Planted in Middleton-in-Chirbury churchyard (J.A. Thompson, 2000, BIRM).

***Taxodium distichum*** (L.)  
Rich.

Swamp Cypress

Neophyte. Planted. Rare.

A small tree in a hedgerow near Grange Farm, Stirchley (R.M. Stokes, 2002).

## Pre-dicots

## Nymphaeaceae

***Nymphaea alba*** L.

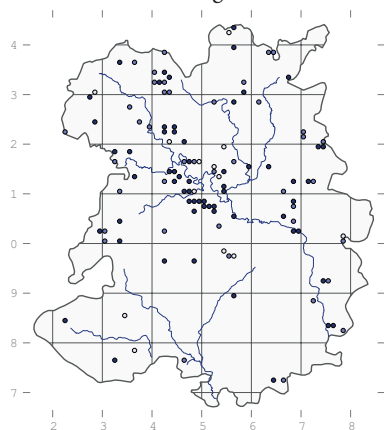
White Water-lily

Native. Local. Stable. Lakes and ponds.

First record: Williams, c. 1800, 'ponds and pools.'

Native in oligotrophic lakes, where it used to grow in deep, clear water. Leighton (1841) reported J.F. Dovaston's finding of a plant with 14 ft long leaf stalks in Llyncllys Pool. It is recorded in A8c *Nymphaea alba* community at Bomere Pool; A10 *Persicaria amphibia* at Berrington Pool; S13 *Typha angustifolia* swamp at Bomere Pool, Fenemere (M.J. Wigginton, 1979) and Marton Pool, Chirbury; and S24 *Calamagrostis canescens* at Fenemere. It would be an axiophyte except that it is often introduced into pools and lakes, although exotic varieties with pink

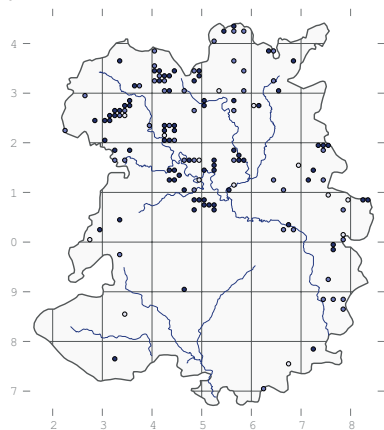
flowers (*N. marliacea* Lat.-Marl.) are sometimes found instead. One interesting site for *N. alba* is Wildmoor Pool, where it has been recorded since 1979 (H.M. Davidson) growing in oligotrophic water and *Carex rostrata* swamp at 425 m. Unlike *Nuphar lutea*, it does not grow in rivers, although J.C. Melvill recorded it in 1909 as planted in the Rea Brook at Meole Brace, where it has not been seen again.



### *Nuphar lutea* (L.) Smith Yellow Water-lily

Native. Local. Stable. Lakes, canals, rivers and ponds.

First record: Williams, c. 1800, 'ponds and pools, common.'



There is usually some *N. lutea* around the margins of the meres, often with *Nymphaea alba*. Both are sometimes planted, but in most sites it is probably native. It is most often in A8 *N. lutea* community in places like Betton Pool (M.J. Wigginton, 1979) and Bomere Pool; but in shallow water this is replaced by A10 *Persicaria amphibia* in sites like Berrington Pool; it extends into marginal vegetation such as S6 *Carex riparia* at Fenemere and S13 *Typha angustifolia* at Bomere Pool and Fenemere (Wigginton, 1979); and even in flooded woodland such as W6 *Salix* × *fragilis* at Betton Pool.

It also grows in canals, although it has become rare in the Montgomery Canal

since it was re-opened to navigation, but it is still abundant in the Prees Branch and the Newport canals. In the rivers, it is most frequent in the Roden and the Tern, and it is found in the Severn at Ironbridge (A.K. Thorne, 2005) and formerly in the Rea Brook at Meole Brace (J.C. Melvill, 1910 and N.M. Mackenzie, 1964).

### *Nuphar* × *spenneriana* Gaudin (*N. lutea* × *pumila*)

#### Hybrid Water-lily

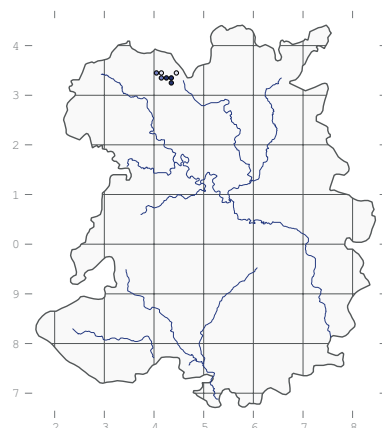
Native. Rare. Stable? Lakes.

A small patch of water-lilies growing in the shade of overhanging trees at Betton Pool (2003, BIRM) are thought to be of this hybrid but it is not possible to be sure until it flowers.

### *Nuphar pumila* (Timm) DC. Least Water-lily

Native. Rare. Decreasing. Axiophyte: lakes.

First record: T. Cox, 1854, 'a mere near Ellesmere.'



Just two patches remaining in Cole Mere, in two bays along the north shore. A third population, on the south shore close to the boathouse, was shaded out by overhanging trees in the late 1990s. In recent years the owner, Shropshire Council, has been persuaded to remove many overhanging willows and rhododendrons from the north shore, which has resulted in a considerable increase in the size of the two surviving stands. It has gone from Blake Mere (last seen by E.A. Wilson, 1973), Kettle Mere (W.B. Allen, 1907), the Mere at Ellesmere (Anon., 1922) and 'Yetchley's' (possibly the Llangollen Canal at Lyneal) (J.W. Heath, 1894) owing to a combination of shade and eutrophication. The reason it persists at Cole Mere is probably that the water quality is exceptionally good, owing to the absence of any direct runoff from farmland, and the only inflow being of unpolluted water from the canal and Black Coppice.

## Magnoliaceae

### *Liriodendron tulipifera* L.

#### Tulip Tree

Neophyte. Rare. Planted. Parks and gardens.

Occasionally grown as an ornamental or roadside tree in places such as Attingham Park (Perring, 1975), Hopesay (M. Leonard, 2004) and by the Welsh Bridge in Shrewsbury. Plants are fully hardy but do not produce viable seed.

## Lauraceae

### *Laurus nobilis* L.

#### Bay

Neophyte. Rare. Planted. Gardens.

A fine specimen used to grow by the ruins of a cottage at Jones's Rough, where it must have been established for many years. Between 1999 and 2005, however, it was almost killed by a severe frost, and the tree collapsed, leaving just a few suckers to regrow in the shade of yews.



*Nuphar* and *Nymphaea* at Berrington Pool



*Papaver rhoeas* at Pimhill Farm



## Eu-dicots

### Ceratophyllaceae

#### *Ceratophyllum demersum*

L.

#### Rigid Hornwort

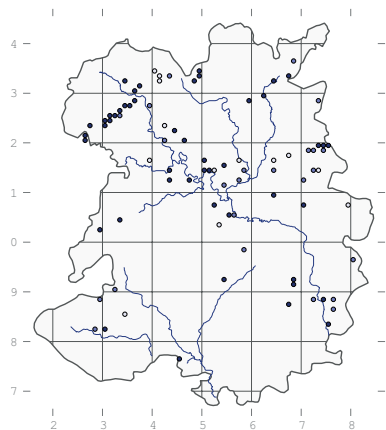
Native. Local. Increasing. Canals, ponds and lakes.

First record: Williams, c. 1800, 'ponds, ditches and pools. The pool at Pitchford.'

A plant of still or slow-flowing water in canals and ponds. The only recorded occurrence in a river was by E.M. Rutter in 1960, in a flood channel by the Cound Brook. It used to be frequent in the Montgomery Canal, but it has largely disappeared from the lengths that have been restored to navigation, although it persists in Aston Locks off-line reserve, Rednal Basin and the Weston Arm. It also grows in the Newport and Prees Branch canals.

Over the years it has been recorded in most of the meres, but it does not persist. In 2003 it was abundant in Morton Pool, but it had never been recorded there previously. It has also made appearances in Berth Pool (W. Beacall, 1905), Blake Mere (W.E. Beckwith, 1892), Cole Mere (P.M. Stocks, 1982), Fenemere (Beckwith, 1892 & B.R. Moss, 1991), Marton Pool, Chirbury (C. Walker, 1986-1997), Shrawardine Pool (Leighton, 1839), Sundorne Pool (Beckwith, 1892), the Mere (Leighton, 1841 – Beacall, 1891), Top Pool, Berrington and White Mere (Beckwith, 1880).

A typical habitat is in shaded water under W6 *Salix* × *fragilis* woodland, as at Morton Pool. A good place to see it is at Copthorne Park in Shrewsbury, where it has been abundant in a pool since 1993.



### Papaveraceae

#### *Papaver pseudoorientale*

(Fedde) Medw.

#### Oriental Poppy

Neophyte. Scattered. Increasing. Waste ground.

First record: J.H.S. Cox, 1993, Prees Heath.

A perennial poppy that is often cultivated in gardens, and tends to crop up on roadsides near houses or where garden waste has been dumped. Not usually recorded unless it is found at a distance from gardens or within sites that are being surveyed. It seems not to persist or reproduce successfully from seed.

#### *Papaver atlanticum* (Ball)

Coss.

#### Atlas Poppy

Neophyte. Casual. Rare. Waste ground.

On waste ground in Bridgnorth (SO722924, Stokes, 2004). It is a common garden plant.

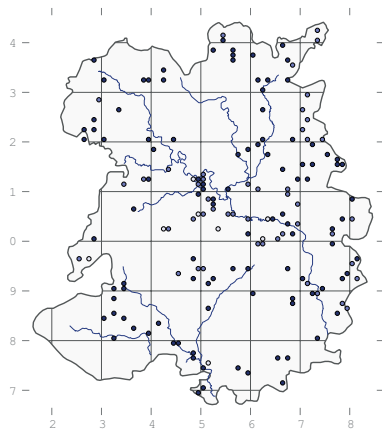
#### *Papaver somniferum* L.

#### Opium Poppy

Archaeophyte. Scattered. Increasing. Waste ground.

First record: H. Spare, 1841, Bromfield.

A casual on waste ground near gardens, on river banks, roadsides, railways and sand quarries. There are recent records of it at Bromfield Quarry (D.H. Wrench, 2011) and Wood Lane Gravel Pit.



#### *Papaver rhoeas* L.

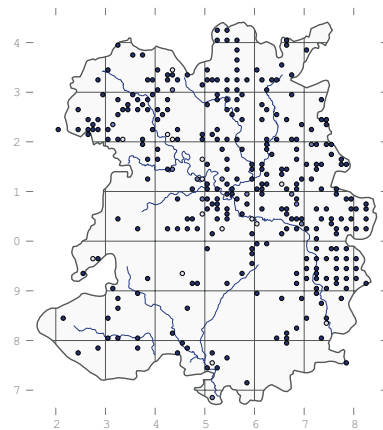
#### Common Poppy

Archaeophyte. Widespread. Stable. Arable fields, waste ground.

First record: Williams, c. 1800, 'cornfields, common in a sandy soil.'

Often abundant in arable fields. It is recorded in OV14 *Urtica urens* at The

Sands and OV23 *Dactylis glomerata* on a road verge at Uppington (Trueman, 1981). Sometimes it occurs on railway lines, river banks, along roadsides and on waste ground. There is no reliable place to see it, but there are often spectacular displays in fields at Pimhill and Charlton Hill, and sometimes on roadsides when the verges have been disturbed.



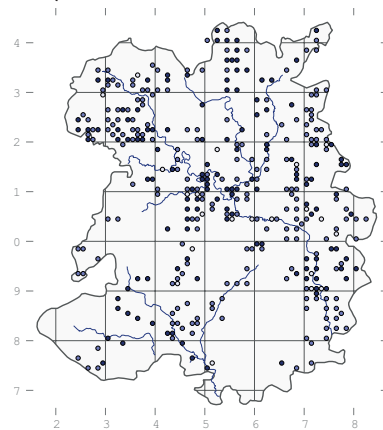
#### *Papaver dubium* L.

#### Long-headed Poppy

Archaeophyte. Widespread. Stable. Arable fields and waste ground.

First record: Williams, c. 1800, 'cornfields, common in a sandy soil.'

A widespread but rarely abundant arable weed throughout the lowlands of the county – possibly showing some affinity to the river valleys. It also grows on roadsides and on waste ground in towns, and even on pavements. Recorded in OV10 *Senecio vulgaris* vegetation on waste ground at Newport and OV23 *Dactylis glomerata* on a road verge at Uppington (both Trueman, 1981). A good place to see it is at Prees Heath, where there are also many other annual weeds.



***Papaver lecoqii* Lamotte****Yellow-juiced Poppy**

Archaeophyte. Casual. Waste ground.

First record (as *P. dubium lamottei*):  
Leighton (SHY), <1889, 'near Shrewsbury.'

Reported from a garden in Oswestry in 1998 (A. Muse, conf. M. Wainwright) where it reportedly came up spontaneously. There are old records for Storchley and Buildwas (W.H. Painter, 1894), Welshampton (W. Phillips, 1899), Benthall (W.B. Allen, 1902), cornfields at Pulley and Bayston Hill (J.C. Melvill, 1906) and Condovery (H.M. Auden, 1908).

***Papaver hybridum* L.****Rough Poppy**

Archaeophyte. Casual. Roadsides.

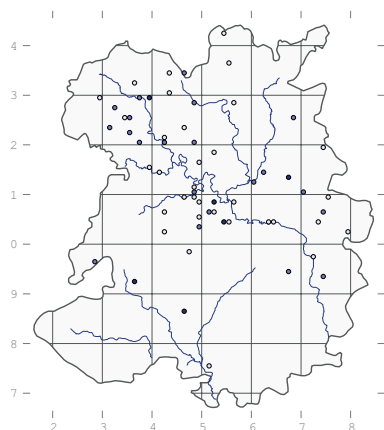
First record: C. Raikes, 1977, Colleybrook Green.

There are only three records for Shropshire, none of them supported by a voucher specimen or with much additional detail. It is a plant of arable fields on chalk or limestone in the south-east of Britain, and at best is only a casual on roadsides in Shropshire. The only recent record is by J.A. Thompson at Stokesay Castle in 1995.

***Papaver argemone* L.****Prickly Poppy**

Archaeophyte. Rare. Declining. Arable fields and waste ground.

First record: Williams, c. 1800, 'cornfields, common in a sandy soil.'



A rare arable weed from the south-east of Britain, only ever on the edge of its range in Shropshire. It was reasonably common in the north Shropshire plain in the 19<sup>th</sup> century but is now very rare indeed, if it is still present at all. The only recent record is by R.M. Stokes in 1998, on disturbed ground at Hadley, in Telford. It may have been over-recorded in Sinker's Flora and

immediately afterwards, as there are numerous unlocalised and unconfirmed records.

***Meconopsis cambrica* (L.)**

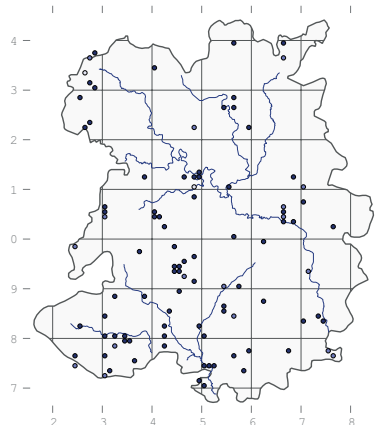
Viguier

**Welsh Poppy**

Native. Local. Increasing. Woods and roadsides.

First record: R.D. Benson, 1891, Pulverbatch (SHYB).

A native species that is currently doing rather well. It is a perennial poppy that is tolerant of light shade. Orange-flowered forms are clearly garden escapes but the wild, yellow-flowered form also occurs frequently. It was not listed at all by Leighton (1841) and was present only in scattered locations by the time of Sinker's Flora, but now it is becoming quite well established. It is considered to be native in Wales, SW England and Ireland, and was presumably also once native in other parts of England. At Earl's Hill it was first recorded in 1994 and is now well established in W8 *Fraxinus excelsior* woodland, and it occurs in similar vegetation at Loamhole Dingle.

***Chelidonium majus* L.****Greater Celandine**

Archaeophyte. Widespread. Stable. Gardens.

First record: Williams, c. 1800, 'hedges, common.'

Occasional in hedges and on waste ground in the vicinity of gardens. It is unevenly recorded, because some people would consider it planted wherever it occurs, although it clearly spreads short distances on its own. It is not recorded as established in the wild, but is probably present in most tetrads in the county.

***Eschscholzia californica***

Cham.

**Californian Poppy**

Neophyte. Casual. Rare. Waste ground.

Rarely found outside gardens. The only recent record is from Cwm Cold, and in the past it was recorded at Attingham Park by Perring in 1972.

***Dicentra formosa* (Andrews) Walp.****Bleeding-heart**

Neophyte. Rare. Increasing. Woods and hedges.

First record: M.E. Roberts, 1979, Brogyntyn Park.

A common garden plant that occasionally becomes established in the wild. M.E. Roberts is credited by Sinker (1985) with the first county record, but it was presumably this species that was recorded as *D. spectabilis* by Lady C. Bentinck in 1924 (*Record of Bare Facts* 34, 1925). It has since been found in woodland at Brown Moss (R.M. Stokes, 1995) and at Newcastle on Clun (J. Clayfield, 2006).

***Corydalis solida* (L.) Clairv.****Bird-in-a-bush**

Neophyte. Rare. Casual. Gardens and churchyards.

First record: Williams, 1796, 'in a small alder copse above Cound Stank bridge.'

A garden plant, occasionally established for short periods in the wild, but not persisting. Williams's population near Cound Stank had gone by 1799 and, although J.C. Melvill claimed that it was well established at Meole Brace Hall in 1906 and 1909, it had gone by 1919 and Melvill revised his opinion of it as 'nowhere really wild' (*Record of Bare Facts* 29, 1920). There are recent records of it in a wood at Brogyntyn Park (M.E. Roberts, 1991) and churchyards at Bishops Castle (J. Wynne-Jones, 2001) and Bedstone.

***Pseudofumaria lutea* (L.)**

Borkh.

**Yellow Corydalis**

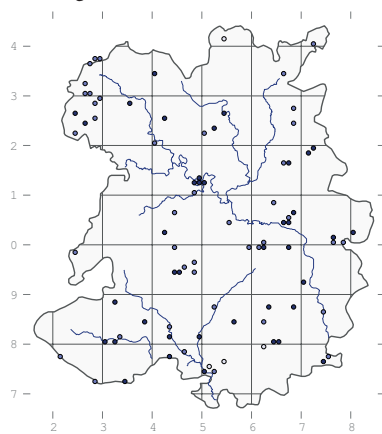
Neophyte. Scattered. Stable. Walls and pavements.

First record: H. Sandford, 1849, Whitchurch.

Common in towns, where it is often grown in gardens and spreads onto pavements beyond. It is also a feature on walls, among the OV42 *Cymbalaria muralis* community. A good place to

## Vascular plants

see it is on old walls at St Mary's Water Lane in Shrewsbury, and it is common in churchyards along gravel paths and on the graves.



### *Ceratocarpus claviculata* (L.) Lidén

#### Climbing Corydalis

Native. Local. Increasing. Axiophyte: woodland and heathland.

First record: 'a student in Physick' (L. Brown), 1727, The Warren, Bishops Castle.

Endemic to western Europe, extending as far east as Germany. It occurs in humid woods such as W10 *Quercus robur* at Maddocks Hill (Trueman, 1981) and Snailbeach Coppice; and W16 *Q. petraea* at Poles Coppice (Trueman, 1981).

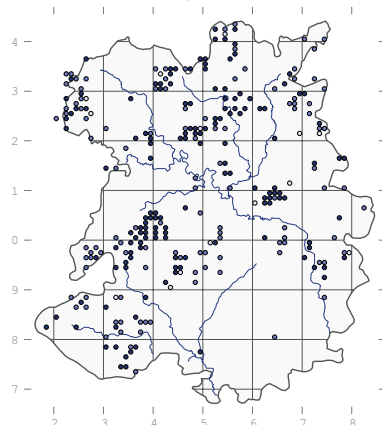


*Ceratocarpus claviculata*



*Helleborus foetidus* at Jones's Rough

It is sometimes abundant in drained bogs such as Smithy Moor, where huge numbers of plants occurred in 2007, and in conifer plantations on hills such as Grinshill Hill. Although it is mainly a lowland plant, it can be found as high as 350 m at Resting Hill.



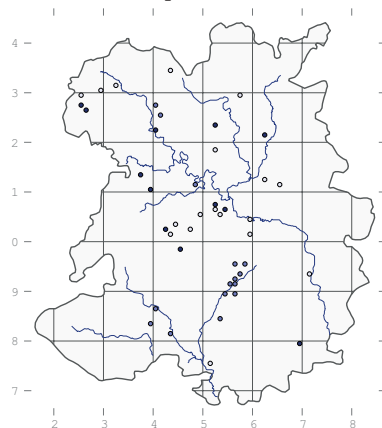
### *Fumaria capreolata* L.

#### White Ramping-fumitory

Native. Local. Stable. Hedges and gardens.

First record: A. Aikin, 1805, Frankwell.

There has been much confusion between *F. capreolata* and *F. purpurea*, resulting in many records that cannot reliably be assigned to either taxon. The only way to be confident about any them is if there is a voucher specimen. The earliest one to come to light so far is by R.D. Benson from Pulverbatch in 1895 (conf. T.G.C. Rich, SHYB), but since then there have been enough confirmed records to show that it is widespread, but not common, in the county. It is a plant of roadsides, gardens and arable field margins. British plants are *F. capreolata* ssp. *babingtonii* (Pugsley) Sell, which is considered to be an endemic subspecies.



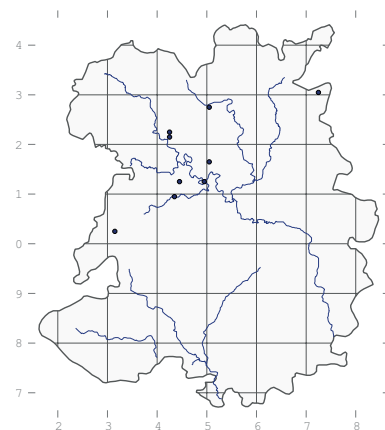
### *Fumaria bastardii* Boreau

#### Tall Ramping-fumitory

Native. Rare. Increasing. Arable fields and roadsides.

First record: Whild (conf. T.C.G. Rich), 2007, Shrewsbury (BIRM).

There are several old records, but none is supported by a voucher specimen and they were rejected by H.W. Pugsley. Several more were given in Sinker's Flora, but again without confirmation. Recently, however, it has turned up in a few places around Shrewsbury, but it does not seem to persist into subsequent years. The first recent record was from a patch of waste ground close to Shrewsbury Prison in 2007, and since then it has been found in arable fields and on roadsides.

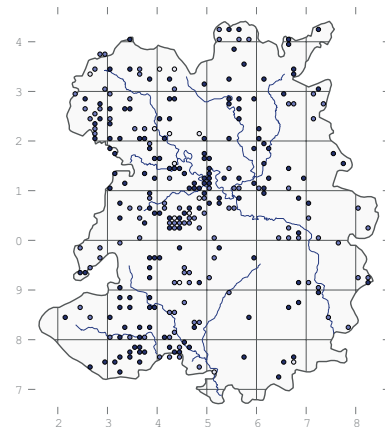


### *Fumaria muralis* Sonder ex Koch

#### Common Ramping-fumitory

Native. Widespread. Stable. Hedges, arable fields, gardens.

First record: T.W. Wilson, 1835, Pimhill (det. H.W. Pugsley, SHY).



Typically found scrambling up hedges, often with *F. purpurea*, usually in areas where the soil is fairly base-rich and fertile. It was recorded in W24 *Rubus fruticosus* scrub on a hedgebank at Nobold, under a hawthorn hedge. It also occurs on the margins of root



crops and cereal fields and on bare ground by roads, in gardens, on building sites, etc. A good place to see it is at Preston Montford, where it has been a common weed of gravel paths and flowerbeds in recent years; also around Pulverbatch, where it has repeatedly been recorded since 1850 (W.M. Hind, TCD).

### *F. × painteri (muralis × officinalis)*, Pugsley

#### Painter's Fumitory

W.H. Painter collected some plants near Lea Castle (SO3589) in 1896 which H.W. Pugsley (1902, 1913) later named *F. × painteri*. These were considered to be fertile hybrids, as distinct from the infertile hybrids that have been reported from a few places in Britain since then. Painter apparently found it again at Ironbridge (SJ6703) in 1907, but we have not been able to track down any specimen. It has never been seen again anywhere, although some plants collected at Broadoak near Shrewsbury in 2005 were very similar, but eventually rejected by the experts as merely a form of *F. muralis*. If there really was just one plant of *F. × painteri* ever, it should probably not be retained as a valid species.

### *Fumaria purpurea* Pugsley

#### Purple Ramping-fumitory

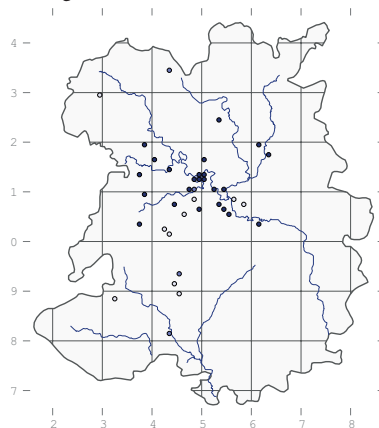
Native. Local. Stable. Hedges, waste ground, gardens.

First record: J.J. Dillenius, 1726, 'ad sepes prope Shrewsbury' (det. Pugsley, OXF).

Not uncommon in roadside hedges around Shrewsbury. A site at Nobold is typical, where it grows in W24 *Rubus fruticosus* underscrub and scrambles up a hawthorn hedge. It favours slightly disturbed conditions and has been recorded growing on herbicide-sprayed bare ground at the base of a leylandii hedge at Cound (D.H. Wrench, 2004-2007) and even in the car park of the Shirehall (S. Swales, 2005). One of its best sites in recent years has been a scruffy hedge at the bottom of St Mary's Water Lane, where the flooding river and council maintenance teams create some bare ground for it each winter. However, it does tend to disappear from sites if the vegetation becomes dense, and in most places it has not persisted for more than a year or so.

Although this was not named as a distinct species until 1912, Leighton (1841) was aware of it, and he devotes

most of p. 345 of his Flora to a description of it, concluding that 'it merits attention and further research.' His specimens of *F. capreolata* var. *reichenbachii* Arnott from Shrewsbury at BM and DBN and from Oswestry at CGE were subsequently identified as *F. purpurea*. Sinker, however, seems to have overlooked it and it may have been confused with *F. capreolata* during fieldwork for his Flora.



### *Fumaria officinalis* L.

#### Common Fumitory

Archaeophyte. Widespread. Stable. Arable fields, quarries and waste ground.

First record: Leighton, 1834, Pulley (CGE).

A common weed of arable field margins throughout the lowlands, avoiding the higher ground around the Cleve Hills and the Stiperstones. It also occurs on disturbed soils on roadsides, in gardens and elsewhere. It is usually a low-growing plant, not scrambling up hedges. One place it seems to be particularly abundant is Much Wenlock, where it has been recorded since 1841 (W.P. Brookes) and where it is still common on roadsides and in arable fields.

There are two subspecies: ssp. *officinalis* is the commoner one and ssp. *wirtgenii* (W.D.J. Koch) Arcang. is more restricted to the south-east of Britain. The latter was first recorded by Melvill (as var. *elegans*) at Meole Brace in 1912 (det. Pugsley, CGE), and then again in the Roman excavations at Wroxeter between 1913 and 1924 (conf. Pugsley). Melvill was of the opinion that it came up from long-buried seed, perhaps from a time when the climate was warmer. In recent years we have found the two subspecies to be about equally common. Sinker (1985) did not record the subspecies.

### *Fumaria vaillantii* Lois.

#### Few-flowered Fumitory

Archaeophyte. Rare. Stable. Waste ground.

First record: J. Ing, 2008, Llynclys Hill.

Generally restricted to the south-east of England, where it occurs very sporadically as an arable weed or on waste ground. A specimen was collected at Llynclys Hill by J. Ing in about 2008, but not identified until some time later (det. T.C.G. Rich, BIRM), and the precise locality is not known. It seems possible that it was a casual, but it is worth looking carefully at fumitories in the limestone areas in case it turns up again.

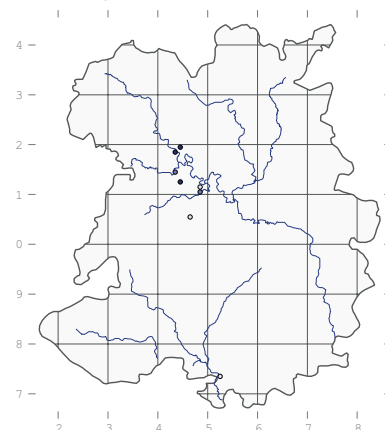
### *Fumaria densiflora* DC.

#### Dense-flowered Fumitory

Native. Rare. Stable. Arable fields and waste ground.

First record: W. Phillips, 1892, 'field near Shrewsbury cemetery' (conf. G.C. Druce, SHY).

Although this is a rare plant of sporadic appearance in the county, it seems reasonably constant in the vicinity of Shrewsbury, where it was first recorded by Phillips and has subsequently been collected by R.D. Benson at Stapleton in 1902 (conf. T.C.G. Rich, SHY), by J.C. Melvill at Meole Brace in 1912 (conf. H.W. Pugsley, HWB) and by B.J. Laney at Bicton Heath in 2009 (conf. Whild, BIRM). There are also unconfirmed records by Perring from fields near Preston Montford in 1962 and by D.L. Buckingham from farms at Yeaton Peverey and Grafton in 1999. The only other record of it was by A.W. Weyman at Steventon near Ludlow, which is given in Hamilton (1909). There is nowhere where it can reliably be found in the county, but waste ground and field margins to the south and west of Shrewsbury are the most promising places to look.



## Berberidaceae

### *Epimedium alpinum* L.

#### Barren-wort

Neophyte. Rare.

Recorded by Melvill in 1917 after it appeared, quite unexpectedly, in a shrubbery at Meole Brace Hall.

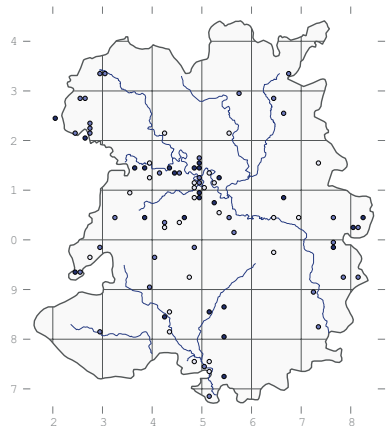
### *Berberis vulgaris* L.

#### Barberry

Native. Scattered. Stable. Hedges and scrub.

First record: 'a student in physick', 1727, New Inn, Ludlow.

Mostly in hedges, where it might well have been planted. It was once cultivated for its fruits, but later eradicated because of its association with rust infection of wheat. During the first world war members of the Caradoc Club were asked to supply localities. This leaves an incoherent distribution pattern, and it has been suggested that it is not native in Britain. The most likely habitat for wild plants would be scrub on dry, base-rich soils. It grows in such a situation at Berrington Pool, but this seems to be derived from an overgrown hedge. A good place to see it is on Sharpstones Hill, where there is a good stand in a roadside hedge by the quarry. It seems to be most frequent around Shrewsbury, so perhaps the Caradoc Club members, most of whom lived in the town, did not try too hard.



### *Berberis thunbergii* DC.

#### Thunberg's Barberry

Neophyte. Rare. Increasing. Hedges and ornamental plantings.

First record: P.S. Gateley, 2003, Ketley Pitmounds.

There is no evidence for this species spreading in the wild yet, as all records are for planted specimens in hedges or elsewhere, but it does reproduce by seed and it is reported as wild in other counties.

### *Berberis julianae* C.K. Schneid.

#### Chinese Barberry

Neophyte. Rare.

Planted by the Newport Canal at Newport (R.M. Stokes, 2003, BIRM).

### *Berberis darwinii* Hook.

#### Darwin's Barberry

Neophyte. Rare.

Possibly self-sown in a quarry on the Wrekin (R.M. Stokes, 2000) and at Craig Sychtyn (R.A. Dawes, 2000).

### *Berberis × stenophylla*

Lindley

#### Hedge Barberry

Neophyte. Rare.

Planted at Ketley Pitmounds (P.S. Gateley, 2003).

### *Mahonia aquifolium* (Pursh)

Nutt.

#### Oregon Grape

Neophyte. Widespread. Increasing. Hedges, woods and gardens.

First record: J.C. Melvill, 1925, 'botanical division IV'.

A popular evergreen shrub from America which is widely planted in woods and hedges, where it spreads slowly to form small stands. Melvill's elusive locality was possibly his own garden at Meole Brace, in which case the first record of it established in the wild was in 1970, also at Meole Brace, by D.M. Evans and M.J. Connell. Where it does occur in hedges it is usually close to houses, and in woods it is often associated with pheasant rearing. It is also often planted in churchyards, and there are fine specimens at St Mary's church in Shrewsbury.

## Ranunculaceae

### *Caltha palustris* L.

#### Marsh Marigold

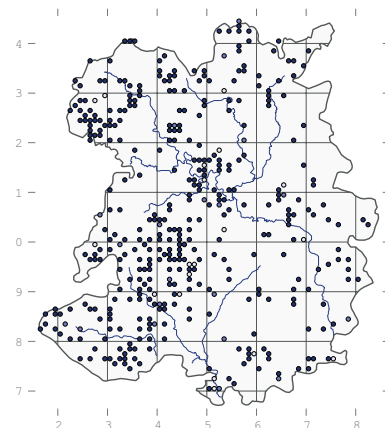
Native. Widespread. Declining. Marshy grassland and wet woods.

First record: Williams, 1800, 'moist meadows and ditches, common.'

In a wide range of wet grasslands in both lowland and upland situations, including MG8 *Caltha palustris* grassland in places like Melverley Farm and Ruewood Pastures; M22 *Juncus subnodulosus* meadows at Crose Mere and Trefonen Marshes (Trueman, 1981); M23 *Juncus effusus* at Ruewood and on the Long Mynd (R. Tapper, 1983);

M27 *Filipendula ulmaria* at Crose Mere; M35 *Montia fontana* at Boiling Well (Trueman, 1981) and other places on the Long Mynd; OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979); S7 *Carex acutiformis* in the Old River Bed; S9 *C. rostrata* at Wildmoor Pool (Tapper, 1983); S24 *Calamagrostis canescens* at Fenemere.

It is perhaps more common in wet woods such as W1 *Salix cinerea* at the Mere; W5 *Alnus glutinosa* at Cole Mere, Crose Mere, Millenheath and elsewhere; W6 *Salix × fragilis* at the Alders at Wollaston, the Dell at Sundorne and Redhill Coppice; W7 *Lysimachia nemorum* at Limekiln Wood (Trueman, 1981); and W8 *Fraxinus excelsior* by the brook at Earl's Hill.



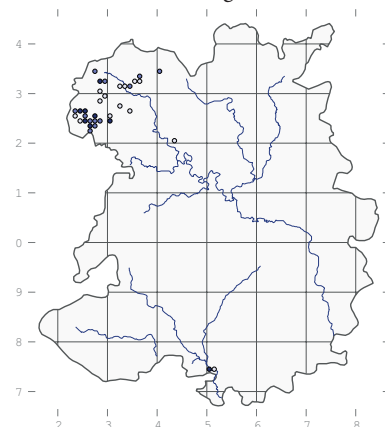
### *Trollius europaeus* L.

#### Globe-flower

Native. Scarce. Decreasing. Axioophyte: damp meadows and shady river sides.

First record: R.H. Waring, 1770, The Hayes, Oswestry.

In fen and marshy grassland, mainly M22 *Juncus subnodulosus* in places like Trefonen Marshes and Sweeny Fen. It also grows in wet woodland at Trefonen and by the Teme at Whitcliffe (first recorded here by F. Westcott in 1842) – the latter being in W8 *Fraxinus excelsior* woodland. In grasslands it is vulnerable both to grazing and to succession, which can make management difficult.



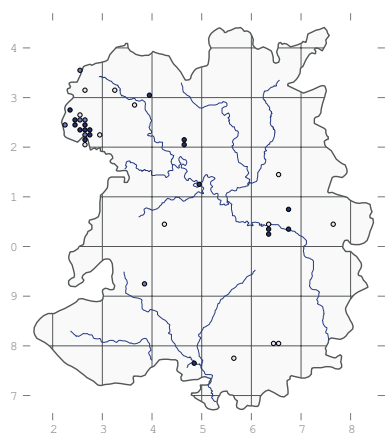
***Helleborus foetidus* L.****Stinking Hellebore**

Native. Local. Increasing. Axiophyte: woodland, quarries, gardens, roadsides.

First records: Williams, c. 1800, 'under Whittington Castle garden near the S.E. corner' and 'amongst bushes by the side of the road between Wenlock and Buildwas'.

In W8 *Fraxinus excelsior* woodland on strongly calcareous soils. It is considered to be intolerant of dense shade, and it is normally only abundant on woodland edges and clearings, but it has grown for a while under yew trees at Jones's Rough. However, the largest population is on Moelydd, where about 50 plants occur in grassland and on collapsed dry stone walls in old field boundaries.

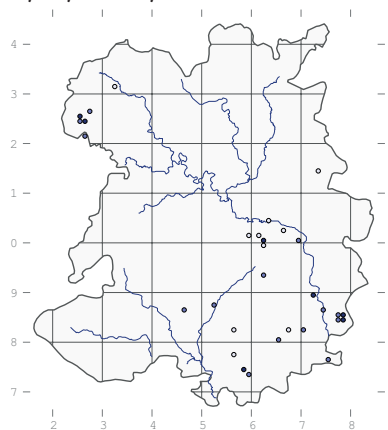
It is widespread in the Oswestry uplands, where it particularly thrives in abandoned limestone quarries. There are recent records for it at Blackbridge Quarry, Blodwel Quarry (A.K. Thorne, 2006), Craig-Ilwyn Quarry (Thorne, 2006), Llynclys Hill (J. Pedlow), Llynclys Quarry and Pant Quarries (J.A. Thompson, 1999), typically in recently vegetated CG2 *Avenula pubescens* on bare limestone or spoil heaps. It has also been recorded often in Farley Dingle, where Williams first recorded it 200 years ago and it is still present on the roadside and in adjacent woodland. In the 19<sup>th</sup> century it was recorded around Oretton and Farlow (G. Jordan, 1856), but it has not been seen there recently. Most other populations are fairly obvious garden escapes, as Williams observed at Whittington Castle. In Shrewsbury it has long grown on a wall overhanging St Mary's Water Lane. Lowland: up to about 260 m on Moelydd (E.D. Pugh, 1978).

***Helleborus viridis* L.****Green Hellebore**

Native. Local. Stable. Woods.

First record: Williams, c. 1800, Lilleshall Abbey.

A common garden plant that is well established or possibly native in some woods in the south-east of the county. The main contenders for a wild site are Bowhills and Perryhouse dingles, above the Alum Brook near Hampton Loade. It has been known here since at least 1898 (L. Kitching) and the population is large and widely scattered along the brooks in W8 *Fraxinus excelsior* woodland. It was once (G. Potts, 1912) recorded by the Sever at Hampton Loade, possibly a plant washed down from the dingles in a flood. This was *H. viridis* ssp. *occidentalis* (Reut.) Schiffn., the native subspecies, which W.B. Allen (1912) also recorded at Caughley. Apart from these sites, almost all the others are close to houses where it has hardly ever been recorded more than once. It is well established in the limestone areas around Much Wenlock and Llynclys, such as Windmill Hill (R.M. Stokes, 1998), a derelict cottage garden at Treflach (P. Parker, 1991), and Llynclys Quarry (Parker, 1991).

***Helleborus orientalis* Lam.****Lenten-rose**

Neophyte. Rare. Gardens.

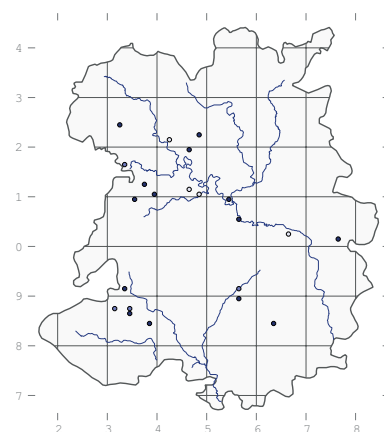
Naturalised at the base of a wall in Hope Bagot (I.P. Green, 2009).

***Eranthis hyemalis* (L.) Salisb.****Winter Aconite**

Neophyte. Scattered. Stable. Gardens, churchyards.

First record: Anon. (Hb. Trow), 1859, Benthall Church.

Barely naturalised in a few places in the vicinity of gardens and churches. A good place to see it is near St Eata's at Atcham.

***Nigella damascena* L.****Love-in-a-mist**

Neophyte. Rare.

As a casual on the towpath of the Sever in Shrewsbury (R.M. Stokes, 2003) and on Clunton Hill (F. Gomersall, 2004).

***Aconitum napellus* L.****Monk's-hood**

Native. Local. Stable. Axiophyte: wet woodland.

First record: Williams, 1799, 'by the side of the brook a few yards above Gossart Bridge between Ludlow and Burford, in abundance'.

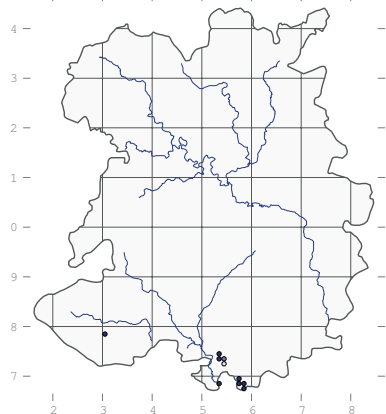
In several places along the Ledwyche Brook and the Brimfield Brook. M.S. Duffell (2009) visited all known populations and found it to be restricted to W6 *Salix x fragilis* carr, where populations were healthy and reproducing freely. In a very few places it has been planted into unsuitable habitat such as road verges, where it did not thrive. Most old records have turned out to have been the garden hybrid, and all historical records have been reassigned here to that taxon, except for those from the two known localities. A good place to see it is by the Brimfield Brook at Gosford Bridge (SO534683, Duffell, 2008), on the county boundary with Herefordshire. It was known to both Williams and J. Babington (Plymley, 1803) at this site.

Edward Whitehead is sometimes credited with the first British record for finding it in 1819 by the Ledwyche Brook below Caynham Camp, where it still occurs. As a formerly valuable medicinal plant, it is impossible to prove that it was not originally cultivated at these sites, as Leighton believed, but even if that were so it would still count as an axiophyte of semi-natural floodplain forests, and pollen records show that it was present



## Vascular plants

in Britain before human occupation, so it is definitely native. There is no evidence of any decline in its native sites and, as garden plants are rarely of this species, there has been no increase either. Lowland: up to about 95 m at Ledwyche Bridge, but a planted specimen on the roadside at Pen-y-wern (J.M. Roper, 1980 & Duffell, 2008) grows happily at about 310 m.



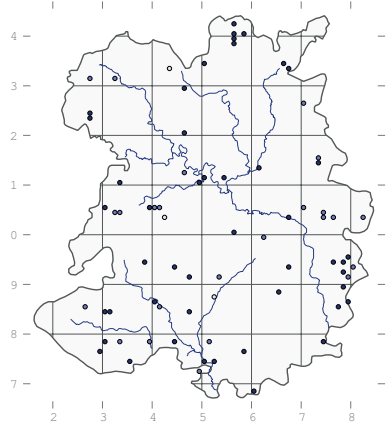
### *Aconitum* × *stoerkianum* L. (*A. napellus* × *variegatum*)

#### Garden Monk's-hood

Neophyte. Scattered. Stable. Roadsides, gardens, woods.

First record: W.E. Hutton, 1977, Bulwardine.

Commonly grown in gardens and often on road verges and woodland edges, where it has almost certainly been planted. It typically does not spread or set seed, and there is usually only one clump (often carefully mown around by some diligent gardener). Occasionally it turns up as a casual on waste ground or by a ruined cottage. A study by M.S. Duffell (2009) showed that most people have not accurately separated this plant from the wild *A. napellus*, and that the majority of plants in the wild are hybrids of garden origin.



### *Consolida ajacis* (L.) Schur Larkspur

Neophyte. Rare. Stable. Arable fields, waste ground.

First record: Leighton, 1841, 'Preston Boats hamlet, probably an outcast.'

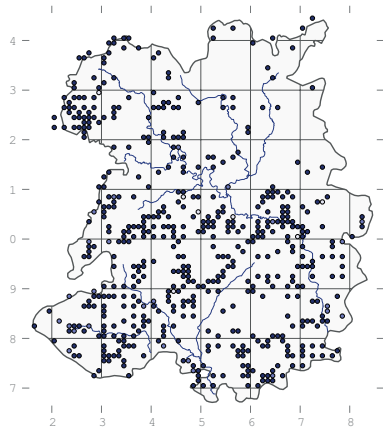
A garden plant that occasionally naturalises on waste ground and in arable fields. The only recent record is from a sandy field of wheat at Lynn (SJ783157, 2010). It was naturalised on waste ground near Buildwas station from 1910 (W.B. Allen) to 1923 (Melvill) and it was recorded as a garden escape at Pont-faen (E.R. Lloyd, 1939) and Davenport (W.R. Crotch, 1841).

### *Anemone nemorosa* L.

#### Wood Anemone

Native. Widespread. Stable. Axiophyte: woodland.

First record: Williams, c. 1800, 'woods, common.'



Although it is primarily a woodland plant, *A. nemorosa* is quite tolerant of open conditions and is often found in species-rich grasslands or even on grassy roadside verges and in hedges in places miles from any remaining woodland. In grassland it has been recorded in MG4 *Sanguisorba officinalis* at Lord's Meadows (Trueman, 1981); MG5 *Festuca rubra* on Llynclys Hill and Stapeley Hill (Trueman, 1981); M22 *Juncus subnodulosus* at Porth-y-waen (Trueman, 1981); M23 *Juncus effusus* at Brook Vessons.

In woods, it is found in W6 *Salix* × *fragilis* by the Borle Brook at Defford, in Loamhole Dingle and Redhill Coppice; W8 *Fraxinus excelsior* everywhere; W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* in Bushmoor Coppice. There is a W8d *Anemone nemorosa* subcommunity, but that is typical of

SE Britain, and it has never definitely been recorded in Shropshire. Instead it is most abundant in the W8e *Geranium robertianum* subcommunity. Good stands can be seen in Benthall Edge and Earl's Hill.

### *Anemone ranunculoides* L. Yellow Anemone

Neophyte. Rare.

Another garden plant of European origin which never really naturalises. In 1838 H. Bidwell recorded it at Badger Dingle and in 1985 Sinker described it as long established in a field at Great Ness.

### *Anemone apennina* L.

#### Blue Anemone

Neophyte. Rare. Stable. Roadsides and woods.

First record: J. Babington, 1796, 'near Ludlow.'

A common garden plant from eastern Europe that sometimes becomes established for a while but is never really naturalised. It has long been known in several places around Ludlow and it has been recorded as a garden escape at Meole Brace (J.C. Melvill, 1911), Pant (T.P. Diamond 1891 – E.D. Pugh, 1964) and Llynclys Hill (R.M. Stokes, 1994). Miss V.O. Lloyd found it to be abundant in Pitchford churchyard in 1939. In 1835 Lees reported that it had been collected in a wood near Ludlow (Shortwood), with the implication that it might have been native there, but that seems unlikely.

### *Clematis vitalba* L.

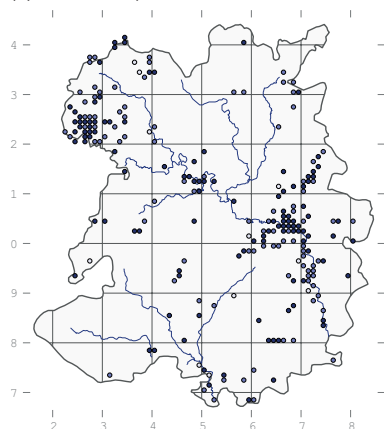
#### Traveller's Joy

Native. Local. Increasing. Limestone quarries and urban areas.

First records: Williams, c. 1800, 'on the wall of Harley church yard; in a cottage garden hedge on the right-hand side of the road a little beyond Norley Green, leading to Willey.'

On bare ground in calcareous habitats, such as CG2 *Avenula pubescens* in Blackbridge Quarry; CG3 *Bromopsis erecta* at Lea Quarry and Foxholes; CG7 *Thymus polytrichus* at Farley Quarry; OV37 *Festuca ovina* on mine spoil at Snailbeach (Trueman, 1981); and W8 *Fraxinus excelsior* woodland at Blodwel Rock (Trueman, 1981) and Llynclys Hill. Otherwise it is quite frequent on waste ground and roadsides in urban areas, where concrete and cement produce the required substrate. Good

places to look for it include the old railway line in Benthall Edge wood, or any limestone quarry. Lowland: up to about 300 m at Snailbeach mines (SJ3702, 2002).



***Clematis tangutica* (Maxim.) Korsh.**

**Orange-peel Clematis**

Neophyte. Rare.

Naturalised by the railway sidings at Coton Hill (R.M. Stokes, 2000).

***Ranunculus acris* L.**

**Meadow Buttercup**

Native. Widespread. Stable. Grassland, fens, woodland rides and roadside verges.

First record: Williams, c. 1800, 'meadows and pastures, common.'

Frequent in neutral meadows of MG5 *Festuca rubra* (in all three subcommunities); MG6 *Cynosurus cristatus* throughout the county; MG1 *Arrhenatherum elatius* on road verges and overgrown fields; MG4 *Sanguisorba officinalis* at Lords Meadows (Trueman, 1984); MG8 *Caltha palustris* at Crose Mere, Melverley Farm, Morton Pool and Ruewood; and in MG10 *Holcus lanatus* at Hope Coppice, Fenemere and Ruewood.

It is less common in calcareous grasslands but has been recorded in CG2 *Avenula pubescens* at Jones's Rough and CG10 *Helianthemum nummularia* at Llynclly Hill and Horseditch (D.H. Wrench, 1994). It is a common component of M22 *Juncus subnodulosus* and M23 *Juncus effusus*, and it grows in M24 *Cirsium dissectum* at Cole Mere. There are two records for it in upland flushes on the Long Mynd, in an M29 *Potamogeton polygonifolius* soakway and an M35 *Montia fontana* rill (R. Tapper & C.M. Owen, 1983). There are also individual records of it in S3 *Carex paniculata* at Fenemere (C. Walker, 1988) and W8 *Fraxinus excelsior* at

Craig-llwyn. It has probably declined at a fine scale in the 20<sup>th</sup> century as a result of agricultural intensification, but it is still widespread throughout the county.



***Ranunculus repens* L.**

**Creeping Buttercup**

Native. Widespread. Stable. Wetlands and waste ground.

First record: Williams, c. 1800, 'sides of ditches and moist, shady grounds, common.'

One of the commonest plants in the county, avoiding only the most acid soils, usually in damp or wet situations in full sunlight or semi-shade. It does not normally grow submerged for any length of time, but M.J. Wigginton (1979) did once record it in A8 *Nuphar lutea* community at Betton Pool. At Lea Quarry it occurs in the less typical habitat of dry CG3 *Bromopsis erecta* (probably in seasonally wet hollows) and at Horseditch it has been recorded in CG10 *Helianthemum nummularia* (D.H. Wrench 1994). It is much more characteristic of mesotrophic grasslands, where it is ubiquitous in MG1, 4, 5, 6, 8, 9, 10 and 13 communities.

It is also common in the less acid mires such as M22 *Juncus subnodulosus* at Morton Pool (Trueman, 1981), Sweeny Fen and elsewhere; M23 *J. effusus* in many places; M27 *Filipendula ulmaria* at Tunstall Wood; M35 *Montia fontana* at Boiling Well (Trueman, 1980), Wild Moor and Lightspout Hollow (both R. Tapper, 1983); and M36 *Chrysosplenium oppositifolium* at Poles Copice.

In the damper open vegetation communities it occurs in OV13 *Capsella bursa-pastoris* on a road verge at Priorslee; OV21 *Plantago major* in a garden in Pant (both Trueman, 1981); OV23 *Dactylis glomerata* on road verges everywhere; OV25 *Cirsium arvense* field margins at Norton, Stockton (Trueman, 1981); OV26 *Epilobium hirsutum* in many places; and on pool margins wherever there is

OV30 *Bidens tripartita*, OV31 *Rorippa palustris*, OV32 *Ranunculus sceleratus* or OV35 *Lythrum portula* vegetation.

Sometimes it is common in swamps such as S12 *Typha latifolia* at Brown Moss; S14 *Sparganium erectum* at Kettle Mere; S24 *Calamagrostis canescens* at Fenemere (Wigginton, 1979); S26 *Phragmites australis* at Cole Mere; and ditches of S28 *Phalaris arundinacea* at Hendre.

It is infrequent in upland grassland, being recorded only in U4 *Agrostis capillaris* at Cwm Collo. Finally, it is ubiquitous in W5, 6 & 7 *Alnus glutinosa* woods; frequent (especially along tracks) in W8 *Fraxinus excelsior*; and occasional (again along tracks) in W10 *Quercus robur*, as on Haughmond Hill. There is no evidence of any change in its distribution or abundance, and it seems to have no altitudinal restriction in this county.



*Trollius europaeus* (Dan Wrench)



*Aconitum* × *stoerkianum* at Faintree



## *Ranunculus bulbosus* L.

### Bulbous Buttercup

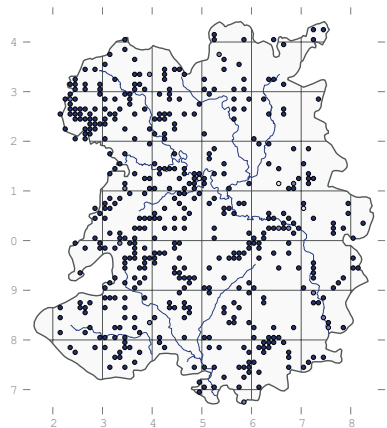
Native. Widespread. Stable. Grassland.

First record: Williams, c. 1800, 'meadows, common.'

Frequent in neutral to calcareous soils, and entirely restricted to grasslands. It is recorded in CG2 *Avenula pubescens* in places like Dolgoch Quarry, Llanymynech Rocks and Llyncllys Hill; CG3 *Bromopsis erecta* at Hilltop Meadow, Lea Quarry, and Stretton Westwood (D.H. Wrench, 1995); and CG7 *Thymus polytrichus* at Moelydd and Presthope.

It is common in mesotrophic grasslands such as MG1 *Arrhenatherum elatius* at Buildwas Church and Ropewalk Meadow; frequent in all three subcommunities of MG5 *Festuca rubra*; and it remains quite common in the better stands of MG6 *Cynosurus cristatus* in places like Becks Field and Melverley Farm.

In upland grassland it is recorded in U1 *Rumex acetosella* at Ketley Pitmounds and U4 *Agrostis capillaris* at Shelve (both Trueman, 1981). It dies back after flowering so is mostly recorded before the middle of June, but it can be identified by its distinctive leaves and swollen root later in the year. Generally lowland, but it occurs at 420 m at Pennerley Meadows and over 430 m at Horseditch (M.J. Wigginton, 1981). It undoubtedly declined considerably in the 20<sup>th</sup> century as a result of agricultural intensification, but there is not much evidence of a continued loss. Good places to see it include the meadows on Llyncllys Hill or Roman Bank.



## *Ranunculus sardous* Crantz

### Hairy Buttercup

Native. Rare. Casual. Arable fields and grassland.

First record: Williams, c. 1800, 'clover fields and pastures in a clay soil.'

There are recent records of it in arable fields at Alcaston (SO461864, H. Hand, 1971-1990), in grassland at Brown Moss (F.H. Perring, 1997), and in a formerly arable field at Lower Hopton (SJ375209, M. Cousins, 2008).

There are old records for Albrighton (E. Elsmere, 1841), Ashford Carbonel (M. McGhie, 1841), Longnor (W.M. Hind, 1846), Ludlow (A.W. Weyman, 1909), Plealey (R.D. Benson, 1892), fields near Shrewsbury (Anon., 1843) and Welbatch (T. Bodenham, 1841).

## *Ranunculus parviflorus* L.

### Small-flowered Buttercup

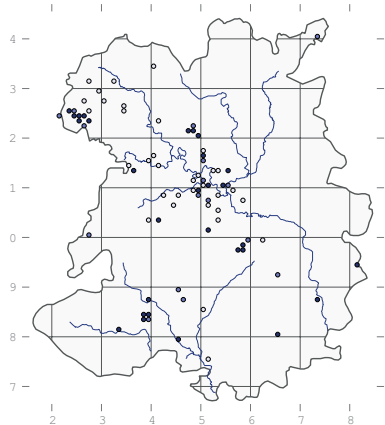
Native. Local. Stable. Grassland, quarries, bare ground.

First record: Williams, 1800, 'plentiful in a pasture between Pitchford and Cound Stank.'

In bare patches in grassland, cultivated soils and in quarries. It has been recorded in a patch of OV24 *Urtica dioica* at Abbot's Castle Hill (Trueman, 2005) and it grows in U1 *Rumex acetosella* at Rabbit Warren on the Long Mynd.

It is often on bare soils, especially in old limestone quarries such as Llyncllys (A.K. Thorne, 2006), Blodwel (R.A. Dawes, 2006) and both Lea and Lilleshall quarries on Wenlock Edge.

Elsewhere it seems typical of overgrazed MG6 or MG7 *Lolium perenne* grassland and it has been found on bark mulch in shrubberies in towns. It is not often found in the same place twice, and it seems to have been thriving in recent years after being rather rare in the latter half of the 20<sup>th</sup> century.



## *Ranunculus arvensis* L.

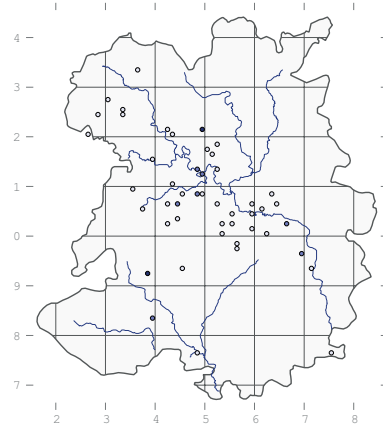
### Corn Buttercup

Archaeophyte. Rare. Declining.

Axiophyte: arable fields.

First record: Williams, c. 1800, 'cornfields on a clay soil.'

Shropshire has always been on the edge of the range of this species, although it was evidently fairly common at the end of the 18<sup>th</sup> century and it declined dramatically during the next hundred years. By the time of Hamilton's Flora in 1909 it was very rare. Sinker had no records during the 1970s and there have been just two records since then. It turned up in a garden that was created from an old field in Wentnor in 1990 (P.D. & S. Kingsbury). The seeds are known to be very long-lived and this is apparently not an uncommon occurrence. In 2010 two plants were found by R. Mileto on the edge of a wheat field at Pimhill Farm (SJ493211).



## *Ranunculus auricomus* L.

### Goldilocks Buttercup

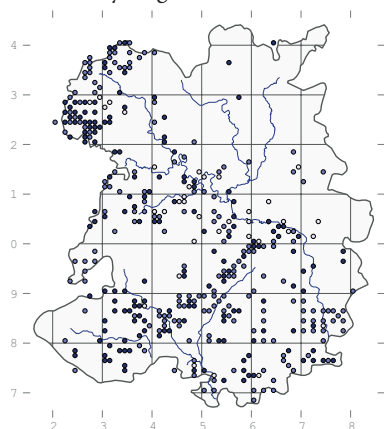
Native. Local. Stable. Axiophyte: woodland and hedges.

First record: Williams, c. 1800, 'woods.'

A perennial woodland plant with a preference for the more calcareous soils but it is occasionally found on base-rich clay or loam elsewhere. Largely confined to W8 *Fraxinus excelsior* woods, where it often grows on the margins, along tracks, or in open patches under trees. It is also common on road verges where other woodland margin plants are common. This is usually W24b *Rubus fruticosus* underscrub (e.g. at Day Houses, Cardington) or even in open MG1 *Arrhenatherum elatius* grassland, as in Buildwas churchyard. There are more records for it now in the north of the county than previously, but it is still much less common than in the hills. At Prees Heath, for example, there are just a few plants in a patch of woodland. It



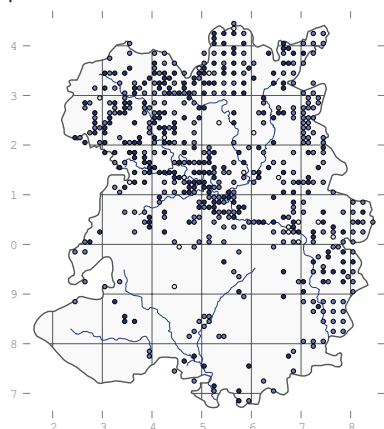
is an apomictic species, and numerous varieties have been described on the continent, but they have not been recorded here. A good place to look for it is at Shelton Rough, where it was first recorded by Leighton in 1835.



### *Ranunculus sceleratus* L. Celery-leaved Buttercup

Native. Local. Stable. Ponds, ditches, rivers, fields.

First record: Williams, c. 1800, 'sides of ponds and ditches.'



On organic mud in communities such as MG10 *Holcus lanatus* grassland at Ruewood; M22 *Juncus subnodulosus* at Crose Mere; OV30 *Bidens tripartita* at White Mere (both M.J. Wigginton, 1979); OV31 *Rorippa palustris* at Brown Moss and Venus Pool; and OV32 *Ranunculus sceleratus* at Crose Mere and White Mere. Sometimes it occurs amongst taller plants, such as S12 *Typha latifolia* swamp at Brown Moss and Shrawardine Pool, and in S24 *Calamagrostis canescens* at Fenemere. It is also quite common in bare, often densely shady patches in peaty woods such as W4 *Betula pubescens* woodland at Lin Can Moss and W5 *Alnus glutinosa* at Cole Mere, Oss Mere, Shrawardine Pool and Haughmond Abbey Woods; at Brown Moss it grows in W6 *Salix* × *fragilis* woodland on the island in the main pool. This shows a wide tolerance of

light levels from completely open to densely shaded. It has an equally wide range of tolerance of nutrients: occasionally it is found in damp hollows in MG6 or MG7 *Lolium perenne* pasture with very high nutrient status.

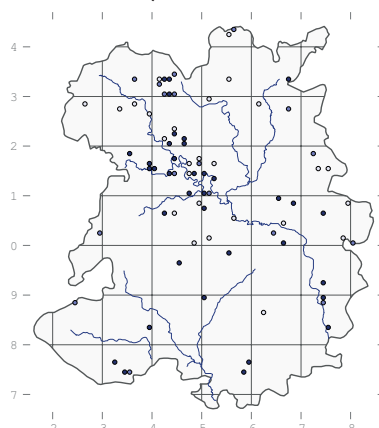
### *Ranunculus lingua* L. Greater Spearwort

Native. Local. Stable. Axiphyte: woodland and fen.

First records: Williams, c. 1800, 'Hencott pool; meer pool near Salop; in the pool adjoining Cound Hall; pits near Albrightlee; Marton pool; Whitemere.'

In fen and woodland on the edges of meres, usually in W5b *Alnus glutinosa* woodland, as at Cole Mere and Shrawardine Pool. It has also been recorded in OV30 *Bidens tripartita* vegetation at Marton Pool, Chirbury, and S26 *Phragmites australis* fen at Sweat Mere (both M.J. Wigginton, 1979).

There are recent records for Black Coppice Pool, Cole Mere, Crose Mere, Fenemere, Shomere Pool (D.H. Wrench, 2003), Shrawardine Pool and Sweat Mere. It is now often planted in gardens and ponds such as those at Heathgates (J. Ing 1997), Highley-Alveley Country Park, Hopesay (M. Leonard, 2003), Lingcroft Pool (Ing 1994), Merrington Green (P. Parker, 1989), Mousecroft Lane (K.K. Bell, 2008), Pentre Hodre and Walford (Parker, 1989). It seems to grow well in such situations, and it has been recorded at Preston Montford since the 1980s, but there is no evidence of it spreading, so it probably does not persist for very long. It should be discounted as an axiphyte in these situations. A good place to see it in its native habitat is in the alder carr in Yell Wood at Cole Mere, where it was first recorded by A. Bloxam in 1836 and has been seen many times since.



### *Ranunculus flammula* L.

#### Lesser Spearwort

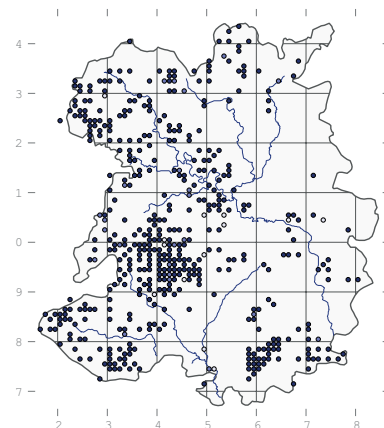
Native. Local. Stable. Flushes, streams and marshy grassland.

First record: Williams, c. 1800, 'sides of pools and ditches, common.'

In still and slow-moving water in a variety of habitats. It is recorded in MG8 *Caltha palustris* grassland at Morton Pool (D.H. Wrench, 1991) and Ruewood; MG10 *Holcus lanatus* at Brown Moss and Ruewood; MG13 *Alopecurus geniculatus* grassland at Brown Moss and Fenemere.

In mires it is found in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M13 *Palustriella commutata* at Caer Caradoc (R. Meade, 2010); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979), Morton Pool (Trueman, 1984) and Trefonen Marshes; M23 *J. effusus* at Bomere Pool, Fenemere, Brook Vessons and elsewhere; M29 *Potamogeton polygonifolius* at Wild Moor (Tapper, 1983); and in numerous M35 *Montia fontana* rills on the Long Mynd (Trueman, 1980, and C.M. Owen & Tapper, 1983).

Sometimes it occurs in marginal vegetation around lakes such as OV30 *Bidens tripartita* at Marton Pool, Chirbury and White Mere (both Wigginton, 1979); OV31 *Rorippa palustris* at Fenemere (Wigginton, 1979); and OV35 *Lythrum portula* community at Brown Moss, Llyn Rhuddwyn (Trueman, 1984) and Newton Mere. In swamps it has been found in S12 *Typha latifolia* at Brown Moss and the Long Bog; S14 *Sparganium erectum* at Berrington Pool and in pits on Old Oswestry; and S27 *Comarum palustre* at Bomere Pool (Wigginton, 1979). Occasionally it persists in woodland such as W1 *Salix cinerea* at Snipe Bog and W4 *Betula pubescens* woodland on Haughmond Hill.



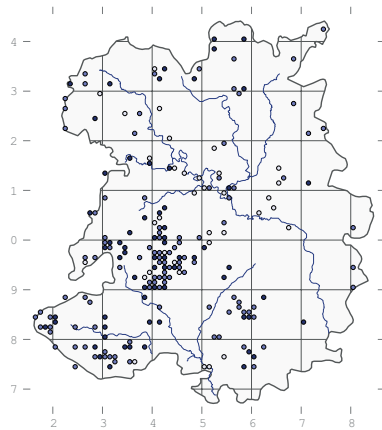
## *Ranunculus hederaceus* L.

### Ivy-leaved Crowfoot

Native. Local. Decreasing. Ponds, upland flushes, edges of lakes.

First record: Williams, c. 1800, 'margins of pools and where water had lodged in winter.'

An annual or short-lived perennial of shallow water and bare mud on the edges of pools, from oligotrophic to mesotrophic conditions. At Boiling Well it grows in M35 *Montia fontana* (Trueman, 1980) and at Newton Mere it occurs in OV35 *Lythrum portula*, whereas at White Mere it is recorded in OV30 *Bidens tripartita* (M.J. Wigginton, 1979) and OV32 *Ranunculus sceleratus* communities.



*Ficaria verna*



*Ranunculus x virzionensis* at Wildmoor Pool

## *Ranunculus omiophyllus*

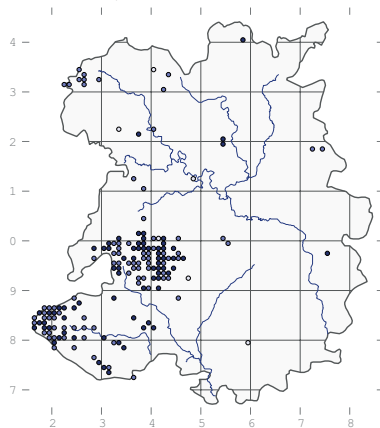
Ten.

### Round-leaved Crowfoot

Native. Local. Decreasing. Axiophyte: upland flushes and lowland heaths.

First record: T. Butler, c. 1886, The Quarry, Shrewsbury.

In nutrient poor, clear water in flushes and streams in the hills and in pools and ditches around mires in the lowlands. It is still quite common in the uplands, especially on the Long Mynd where it is a characteristic component of M35 *Montia fontana* at Boiling Well and the top of Carding Mill Valley (Trueman, 1980). It is also quite common on the Stiperstones range, on Stapeley Hill and on various other hills in the south-west. It used to grow at Callowgate on Titterstone Clee (J.B. Duncan, 1905) but it seems to have gone from there now. In the lowlands it favours heathy areas around Knockin and Shawbury Heath, where it was first recorded by W. Phillips in 1897 and is still present in shallow pools, although the area is now intensively farmed. It also turned up in a new site at Molverley Farm in 1995.



[*Ranunculus tripartitus* DC., Three-lobed Crowfoot

Recorded by Leighton (as *R. aquatilis* var. *tripartitus*) at Hencott Pool.]

[*Ranunculus baudotii* Godron, Brackish Water-crowfoot

A specimen collected by T.B. Bell, labelled 'near Shrewsbury' is apparently at E (det. S.D. Webster) but without further details it seems unwise to accept this species for the county.]

## *Ranunculus trichophyllus*

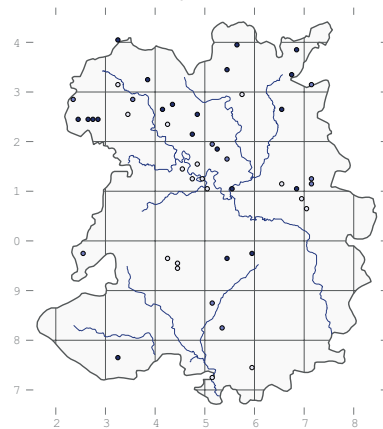
Chaix

### Thread-leaved Water-crowfoot

Native. Scattered. Stable. Axiophyte: pools.

First record: Leighton, 1835, 'stream below Hencote.'

Usually in lowland ponds, where it behaves as an annual and is often not present in consecutive years. At Attingham Park it is uncharacteristically persistent in a pond in the Deer Park, where it has been recorded since the 1970s (Perring, 1972). At Brown Moss it is less reliable, having been abundant in the main pool in 1995 (Perring) and 1997. It often turns up in farm ponds such as those at Holly Farm, Astley, in 1997 and Ollerton Lane in 2009, and sometimes in calcareous temporary pools in limestone quarries such as at Dolgoch Quarry in 1998. In 1978 C.G.A. Paskell recorded it in a section of the then disused Montgomery Canal, and in 1896 and 1897 W.H. Painter collected it in the 'old canal' at Stirchley, but those are the only canal records. Although Leighton's first record was from a stream, it has not been found in flowing water since then. As a plant of slightly calcareous farm ponds, it is an indicator of the less intensively farmed landscape rather than areas of exceptional ecological value.



## *Ranunculus aquatilis* L.

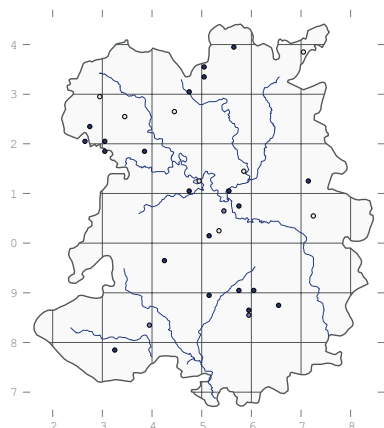
### Common Water-crowfoot

Native. Widespread. Stable. Pools and swamps.

First record: Leighton, 1836, 'pit west of the Old Factory, Shrewsbury'; CGE, SHY.

Widespread in pools, in A2 *Lemna minor* MG10 *Holcus lanatus* and OV31 *Rorippa palustris* at Brown Moss; OV35 *Lythrum portula* at Llyn Rhuddwyn (Trueman, 1981); S9 *Carex rostrata* at Wildmoor Pool (Trueman, 1981, and

R. Tapper, 1983); S12 *Typha latifolia* at Brown Moss and Battlefield; S14 *Sparganium erectum* at Brown Moss; and S27 *Comarum palustre* at Brown Moss (Trueman, 1983). The map below is of *R. aquatilis sens. lat.* as it is often not found in flower.



### ***Ranunculus × virzionensis***

A. Félix (*aquatilis* × *peltatus*)

Native. Rare. Stable. Streams.

In the stream above Wildmoor Pool (SO425965, Whild, 2003, BIRM). The identification is based on its being intermediate between the two parent species, which both occur close by, and in particular by its deformed floating leaves. It has been seen there by many of the country's leading aquatic plant specialists, and it is widely accepted to be this taxon, but it has to be taken as only a tentative identification.

### ***Ranunculus peltatus*** Schrank

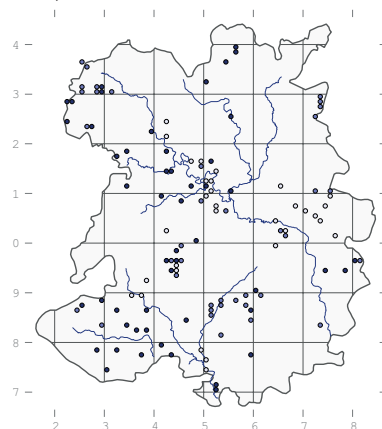
Pond Water-crowfoot

Native. Local. Stable. Axiophyte: ponds and streams.

First record: L. Brown, 1726, 'in ye Teme & Corve by Ludlow.'

In mesotrophic pools and clear, small streams and rills, from lowland rivers to the most upland pools at Abdon Burf on Brown Clee, at 535 m (SO593865, 2011). It often occurs in field ponds in open sunlight, in places like Battlefield and Derrington. In the past it was recorded in some of the meres, specifically Alkmund Park Pool (Leighton, 1832), Berrington Pool (W. Phillips, c. 1905) and Mere Pool (Hamilton, 1909) but the only recent such site for it is Brown Moss, where it grows in several of the pools. On the Long Mynd it occurs in Wildmoor Pool and in a nearby stream, with a number of related taxa, and it has also been recorded in Carding Mill Valley (W.H. Painter, 1897), Gogbatch (H.M. Davidson, 1977) and New Pool Hollow. In lowland rivers it grows in the Perry at Ruyton-XI-Towns, the Roden

at Papermill, and the Teme at Ashford Carbonel; there is even an old record of it in the Severn at Buildwas (Painter, 1898).



### ***Ranunculus penicillatus***

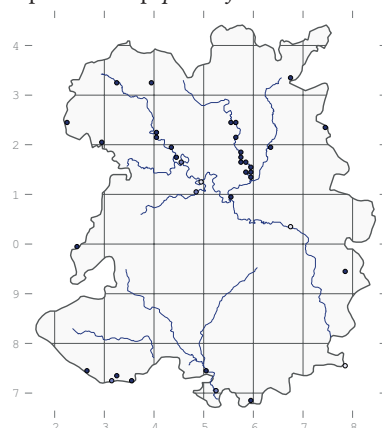
(Dumort.) Bab.

Stream Water-crowfoot

Native. Local. Stable. Axiophyte: rivers and brooks.

First record (as *R. fluitans*): Leighton, 1838, River Severn in Shrewsbury (CGE, SLBI).

This is the main water-crowfoot in all but the larger rivers in the county. It is recorded in the rivers Camlad, Perry, Roden, Severn, Tanat (A.P. Dawes, 2008), Teme, Tern and Vyrnwy (Dawes, 2008), and in the Lonco Brook and Tetchill Brook (R.A. Dawes, 2010). It usually occurs in shallow water where there is a gravel or solid rock substrate. The river water-crowfoots are difficult to identify, especially when not in flower, and their taxonomy is unstable, so they are not well known, and historical records are difficult to interpret. It is adversely affected by shade and by dredging, so it has almost certainly decreased over time, but there are still too few records for any trend to be detectable. A specimen collected by E.B. Benson in the Rea Brook at Meole Brace in 1898 has been identified as *R. penicillatus* ssp. *penicillatus* by S.D. Webster; other plants have been reported as ssp. *pseudofluitans*.



[*Ranunculus × bachii* Wirtg. (*trichophyllus* × *fluitans*), Wirtgen's Water-crowfoot

Recorded in the Severn at Bewdley (J. Fraser, 1883) and Buildwas (W.H. Painter, 1897) but, although the records were carefully made, they cannot be confirmed and Fraser's record was rejected by J.G. Baker and C.C. Babington.]

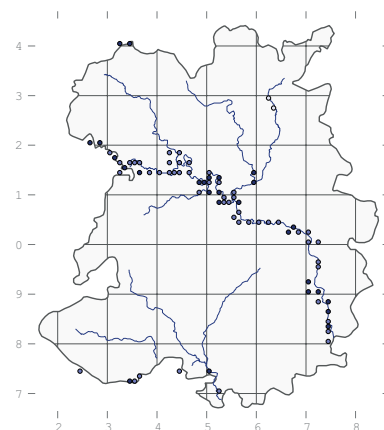
### ***Ranunculus fluitans*** Lam.

River Water-crowfoot

Native. Local. Stable. Axiophyte: lowland rivers.

First record: Leighton, 1830, River Severn in Shrewsbury, CGE.

The largest and most lowland of the river water-crowfoots, often found in deep water in sluggish, murky rivers. It can still be found in the Severn in Shrewsbury where it is frequent around the river loop. It is recorded in the Severn up to the Welsh border, in the Vyrnwy, the Teme, the Dee and the lower reaches of the Roden. There are two old records (Benson, 1898 & 1902) for the upper reaches of the Tern which are supported by voucher specimens (SHYB) but need modern determinations.



### ***Ranunculus circinatus*** Sibth.

Fan-leaved Water-crowfoot

Native. Local. Stable. Axiophyte: canals and meres.

First record: W. Phillips, 1878, Shrewsbury Canal, Shrewsbury.

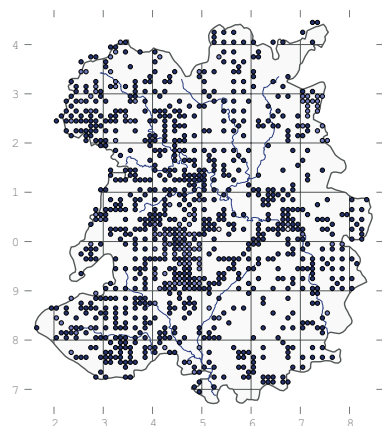
In several meres, notably Cole Mere, where it was first recorded by M.J. Wigginton; Marton Pool, Chirbury (E.B. Benson, 1898); and White Mere (Anon, 1977). It is also well known on the canals, and there are recent records for several parts of the Montgomery Canal (R.V. Lansdown, 1997). It used to grow in A3 *Spirodela polyrhiza* community in the Newport Canal (Trueman, 1981).



***Ficaria verna* Huds.****Lesser Celandine**

Native. Widespread. Stable.  
Riverbanks, meadows, woods.

First record: Williams, c. 1800, 'meadows and woods, common.'



Common in damp situations, but not on permanently wet soils. It is typical of river banks, damp slopes in woodland, seasonally wet hollows and winter wet grasslands. It is commoner on calcareous soils and almost absent from acid soils on hills such as the Stiperstones, but it tolerates a range of conditions from full sun to shady woodland.

It is recorded in MG1 *Arrhenatherum elatius* grassland on a road verge at Preston Montford (S.T. Geikie, 2008) and – very characteristically – in MG1c *Filipendula ulmaria* vegetation on the banks of the Severn in Shrewsbury; MG5 *Festuca rubra* in meadows at Knowbury, Llanhowell (both Trueman, 1981) and Cold Weston Farm (D.H. Wrench 1995); M23 *Juncus effusus* at Brook Vessons; OV23 *Dactylis glomerata* on a road verge at Shelton; and in OV24 *Urtica dioica* on the banks of the Severn in Shrewsbury.

In woods it is found in W6 *Salix × fragilis* by the Borle Brook, in Loamhole Dingle and elsewhere; W6d *Sambucus nigra* by the Severn opposite Shrewsbury Castle and by the Worfe at Beckbury; W7 *Lysimachia nemorum* below the Ercall (Trueman, 1981); in just about all W8 *Fraxinus excelsior* woods; W9 *Sorbus aucuparia* in Betchcott Hollow; and W24 *Rubus fruticosus* scrub at Lower Wallop and Day Houses.

Sometimes it is very abundant, as along the towpath of the Montgomery Canal at Llanymynech or along a roadside ditch at Sansaw Heath, but usually it just forms patches where conditions are suitable. Four subspecies have been recorded in the county: ssp. *ficaria* Clapham is by far the most common, with about a quarter of populations being ssp. *bulbilifer* Lambinon, but there are no obvious

differences in habitat. The other two are rare garden escapes: ssp. *ficariiformis* (F.W. Schultz) Rouy & Foucaud has been recorded on a roadside verge at Albrighton (H.V. Hughes, 2004) and ssp. *chrysocephalus* P.D. Sell is naturalised along the path above the Old River Bed, at Mount Pleasant.

***Myosurus minimus* L.****Mousetail**

Archaeophyte. Rare. Casual. Arable fields.

First record: P.H. Oswald, 1970, Betton Pool.

The only record of this plant in Shropshire was by Philip Oswald, who found it on the edge of an arable field near Betton Pool (SJ5108) in 1970.

***Adonis annua* L.****Pheasant's Eye**

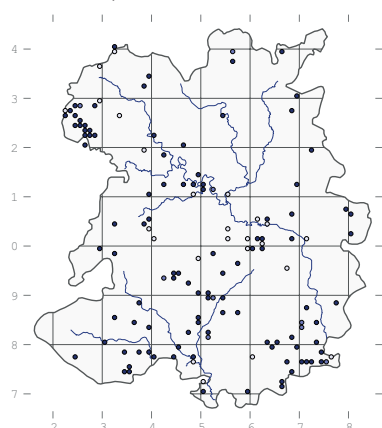
Archaeophyte. Rare. Casual. Arable fields.

Just three records: 'banks of the Severn, a short distance below Coalport' (E. Lees, 1835); 'near Ludlow' (H. Spare, 1841); and 'in a cornfield at Walleybourne' (R.D. Benson, 1870).

***Aquilegia vulgaris* L.****Columbine**

Native. Local. Increasing. Woods, hedges and gardens.

First records: Williams, c. 1800, 'by the side of the road between Habberley and Minsterley; between the Bull Farm and Evenwood near Acton Burnell; and woods about Harley.'



Occasional in open woods on calcareous soils, where it may be native. Early recorders evidently considered it wild in places such as Standhill Coppice (W.P. Brookes, 1832) and the Wyre Forest (E. Lees, 1841). It is most common in W8 *Fraxinus excelsior* woodland but it is usually found along rides and roadsides where

it is difficult to conclude that it is not just a garden escape. A number of garden cultivars exist but they do not seem to persist in the wild. It is more widely recorded now than previously, but it was ignored as a garden plant in Sinker's Flora so the increase is much less than it appears.

***Aquilegia pyrenaica* DC.****Pyrenean Columbine**

Neophyte. Rare.

In 1961 E.M. Rutter collected a specimen at Pen-y-Coed, near Blodwel Rock (SHY), and described it as 'established here for many years' but it has not been recorded since.

***Thalictrum aquilegifolium* L.****French Meadow-rue**

Neophyte. Rare.

A garden escape, established on waste ground in Dawley (SJ682059) in 1998.

***Thalictrum flavum* L.****Meadow-rue**

Native. Local. Stable. Axiophyte: floodplain meadows and woodland.

First records: Williams, c. 1800, 'on the banks of the Severn at the turn of the road between Cronkhill and Cronkhill turnpike; near Underdale; on the banks of the Tern at Duncot.'

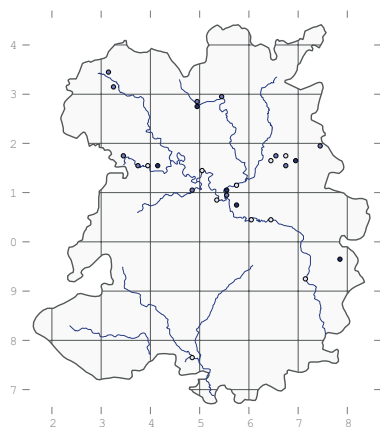
The floodplains of the rivers in the North Shropshire plain once covered vast areas which are now drained and improved for agriculture. *Thalictrum flavum* is one of the species that is almost entirely restricted to these floodplains. It is usually found on damp, organic, base-rich and often eutrophic soils formed from sedge peat, in the valleys of the rivers Severn, Perry, Roden and Tern, and on the Weald Moors.

Because so much apparently suitable habitat has been lost, it would be easy to assume that this species is declining, but the records show that it was always rare in this county. Williams considered it a rare plant in 1800. Leighton described it as rare in 1841, and gave just two records of it – one by W.P. Brookes by the Severn at Buildwas (conf. Leighton, SHY), and one by H. Spare at Oakly Park. But Spare recorded so many species there that any record of his has to be treated with caution, and it has not been reported from that part of the county again.

It is usually found in tall herb on ditch sides or in open woodland. At

Ruewood Pastures it grows in S28 *Phalaris arundinacea* tall-herb fen, but only since the stand there was fenced off and allowed to become overgrown. Before that it was in the shade of an unmanaged hedge that could loosely be assigned to W6 *Salix* × *fragilis* woodland. At Hincks Plantation it also grows in W6 woodland.

It is highly susceptible to grazing, which explains why it is rarely found in pasture or grazing marsh. At Attingham Park it is rare in a ditch in the Deer Park, where it is subject to low grazing pressure, but nevertheless it does not thrive. Despite its seemingly tenuous hold in Shropshire, there are as many sites for it now as at any time in the past, and new ones seem to crop up as quickly as the old ones are lost, so overall there has been no change. The highest altitude at which it has been recorded in the county is around 100 m, at Ebnal, near the source of the R. Perry, where E.R. Lloyd knew it in the 1930s and 1940s.



### *Thalictrum minus* L. Lesser Meadow-rue

Neophyte. Rare. Stable. Roadsides.  
First record: E. Lees, 1841, Buttonoak.

Although it is considered native in northern Britain, particularly around the coast, it is only present in Shropshire as a garden escape. There are recent records for Llynclys Hill (R.A. Dawes, 2003) and Prees Higher Heath.

### Platanaceae

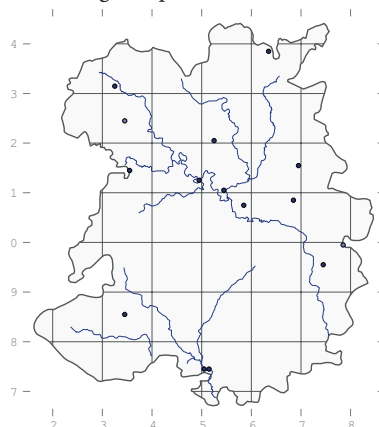
*Platanus* × *hispanica*  
Miller ex Münchh. (*occidentalis* × *orientalis*)

#### London Plane

Planted. Widespread. Country estates, towns and roadsides.

In formal plantings such as in Shrewsbury town centre, in churchyards, in country estates

and elsewhere. Although it is a fertile hybrid, there is no evidence of it reproducing either by seed or vegetatively. It was not recorded in earlier Floras for this reason, despite there being many mature trees in the county in places such as Loton, Walcot and Attingham parks.



### Buxaceae

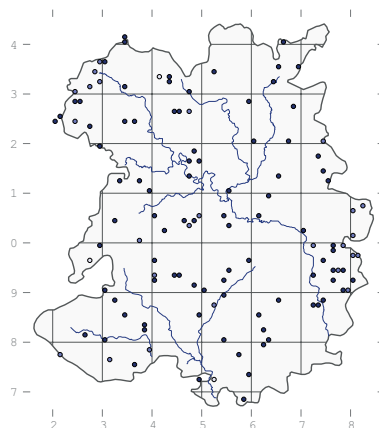
*Buxus sempervirens* L.

#### Box

Neophyte in v.c. 40. Scattered.  
Increasing. Hedges and woods.

First record: M. McGhie, 1841, Tinker's Hill.

Although it is arguably native in some places in southern England, this species is always pretty obviously planted or naturalized in Shropshire. There are no very old plants of it, and it does not seem to reproduce. Sinker (1985) considered it to be hardy even in cold winters. It is often planted for (pheasant) cover or for ornament in woods, and it is abundant in Aston Hill Covert, Church Aston, for example. Otherwise it is sometimes found by the ruins of cottages or, even more obviously, planted in hedges near farms (e.g. at Longslow) and in churchyards. A fine patch grows along the roadside in Knowle Wood. One place where it has been recorded for nearly a century is Badger Dingle, where J.C. Melvill recorded it in 1913.



### Gunneraceae

*Gunnera tinctoria* (Molina)  
Mirbel

#### Giant Rhubarb

Neophyte. Rare. Increasing. Stream sides.

Established by the Camlad at Hockleton (F. Gomersall, 2007) and by a stream at Edstaston.

### Paeonaceae

*Paeonia officinalis* L.

#### Garden Peony

Neophyte. Scarce. Casual. Gardens and waste ground.

Planted in places such as the grounds of Stokesay Castle (J.A. Thompson, 1995) and churchyards, and sometimes found in the wild as a garden throw-out, as at Quarry Wood, Hinstock and Hadley Park, but not persisting.

### Hamamelidaceae

*Liquidambar styraciflua* L.

#### American Sweetgum

Neophyte. Rare.

Planted at Ketley Pitmounds (SJ6811, P.S. Gateley, 2003).

### Grossulariaceae

*Ribes rubrum* L.

#### Red Currant

Archaeophyte. Widespread. Stable.  
Hedges, woods, gardens.

First records: Williams, c. 1800, 'Eaton Mascott Coppice, by the brook side; by the side of Cound Paper Mill Stream; and Cound Brook.'

Occasional in hedges and woods, usually not far from houses or in places where other garden plants occur. It has been recorded in a variety of woodland types, including W6 *Salix* × *fragilis* at Marton Pool, Chirbury; W7 *Lysimachia nemorum* at Fastings Coppice; W8 *Fraxinus excelsior* at Brownheath Moss and Llynclys Hill; and W10 *Quercus robur* woodland at the Mere. Most plants are clearly garden outcasts, and it is not apparent that it has a native habitat in the county. It is a lowland plant, growing up to about 200 m at Snailbeach. Most plants found in the wild have small berries, suggesting that they are bird-sown rather than garden outcasts or deliberately planted, and this holds true even when it is abundant in hedges, as at Duddlewick Bridge.

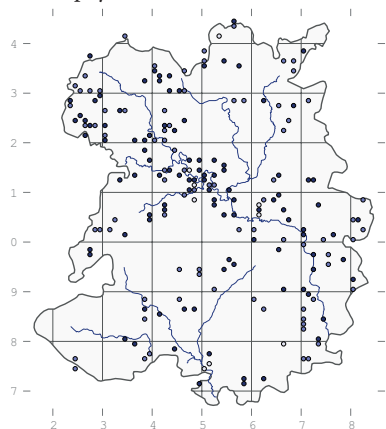
## *Ribes nigrum* L.

### Black Currant

Native. Local. Stable. Wet woods,

First record: Leighton, 1841, 'brook in the lane leading from Bayston hill to the Sharpstones hill.'

In wet woods around the meres, typically in W5 *Alnus glutinosa* woodland in places such as Cole Mere, Fenemere, Morton Pool, Oss Mere (M.J. Wigginton, 1979) and Sweat Mere. It also persists in W6 *Salix* × *fragilis* woodland in sites that are drying out, like Hencott Pool, the Mere at Ellesmere, and White Mere. It is also widely grown and sometimes it becomes established on waste ground, by rivers and in hedges. There is debate about whether it is native in Britain or not, but it has been recorded around the meres since Leighton's time, and it grows in a distinct semi-natural vegetation community. If it were not so widely cultivated, it might usefully be classed as an axiophyte.

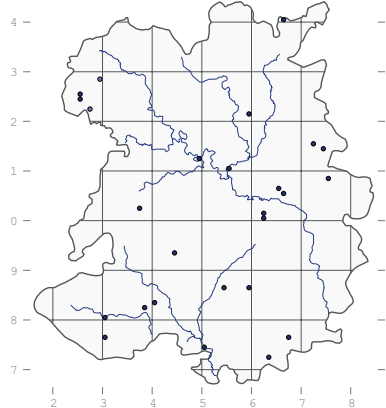


## *Ribes sanguineum* Pursh

### Flowering Currant

Neophyte. Scattered. Increasing. Gardens and hedges.

First record: Perring, 1972, Attingham Park.



Usually planted but sometimes bird-sown in patches of scrub, in hedges and in gardens. It is rarely recorded more than once in any site,

but that may be because botanists ignore it as planted. At Attingham it is still present after thirty years. On Brown Clec it grows near some old mining ruins at 492 m altitude at Abdon Burf (SO59818672, 2004).

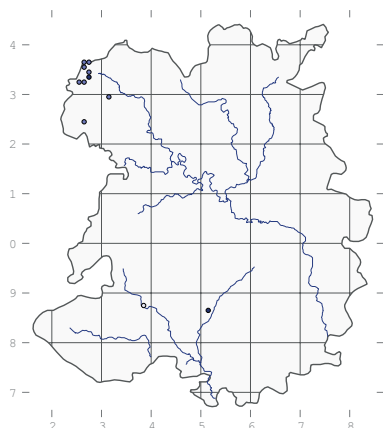
## *Ribes alpinum* L.

### Mountain Currant

Neophyte in v.c. 40. Rare. Stable. Hedges.

First record: W.B. Allen, 1904, 'railway embankment, Plowden, a monoecious plant.'

A dioecious plant of limestone woods in northern England, but widely planted elsewhere, and only ever present in Shropshire as an introduction. It is planted in hedges on estates around Selattyn (M.E. Roberts, 1978 & 1993) and in one hedge at Aston Munslow (M.B. Fuller, 1976 & 1987). It does not show any sign of becoming naturalised.

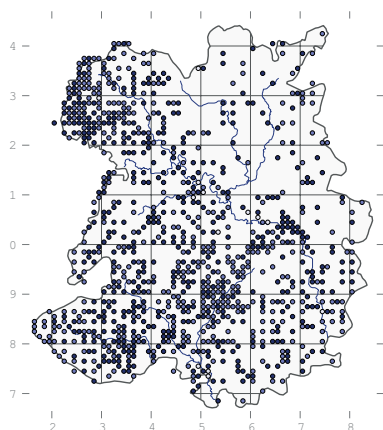


## *Ribes uva-crispa* L.

### Gooseberry

Neophyte. Widespread. Stable. Hedges, woods

First record (as *R. grossularia*): Williams, c. 1800, 'hedges; walls of Red Castle near Hawkstone.'



Thought to have first become established in the wild in about the 18<sup>th</sup> century, but often well naturalised in

woods and hedges. It occurs in W8 *Fraxinus excelsior* woodland or equivalent hedges in places like Craig Syctyn (R.A. Dawes, 2000) and Betton Pool. It is often found on damp soils close to rivers; for example it is abundant at Weirhill Wood near Shrewsbury, again in W8 woodland.

## Saxifragaceae

### *Bergenia crassifolia* (L.)

Fritsch

### Elephant-ears

Neophyte. Rare. Increasing. Waste ground.

First record: Lockton, 1998, Llynclys Hill.

A garden escape, established in many places including an abandoned quarry on Llynclys Hill, at Nantmawr Quarry, and along the lane past Puleston Common.

## *Saxifraga cymbalaria* L.

### Celandine Saxifrage

Planted. Rare. Stable. Gardens.

First record: Sinker, 1970, Kinnerley.

A garden plant that sometimes becomes established in the wild for a while, but has not yet done so in Shropshire. Sinker recorded it as self-sown in a garden in Kinnerley, but did not consider the record worthy of publication in his Flora. M.B. Fuller also recorded it in the garden at Broncroft Castle in 1979.

## *Saxifraga* × *urbium* D. Webb

(*spathularis* × *umbrosa*)

### Londonpride

Neophyte. Scattered. Increasing. Quarries, roadsides, gardens.

First record: E.R. Lloyd, ca. 1930, Craignant.

A garden escape, rarely persisting, but known at Craignant Quarry since the 1930s and still there in 1999 (R. Hesketh). It seems to favour slightly calcareous, disturbed soils and is not invasive. None of its known sites is far from houses.

## *Saxifraga granulata* L.

### Meadow Saxifrage

Native. Local. Declining. Axiophyte: species-rich grassland.

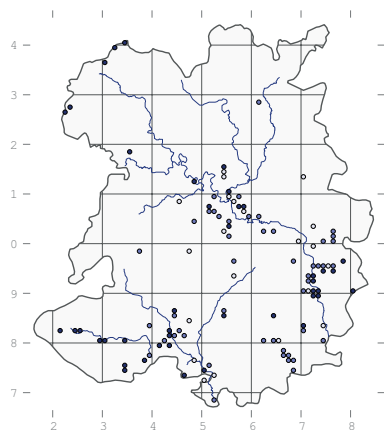
First record: Williams, c. 1800, 'meadows, common.'

Recorded habitats for this species include meadows, hedgebanks,



riverbanks and open woods. It is usually found on sandy, well-drained and often slightly disturbed soils in humid situations, mostly in the valleys of the rivers Severn and Clun. Sometimes it is found in U1 *Rumex acetosella* grassland; for example, W.A. Thompson recorded it in the 1980s at Upper Forge in association with *Cerastium semidecandrum*, *Myosotis ramosissima* and *Trifolium striatum*, and it was known to Beckwith at Downton Quarry on Haughmond Hill in the 19<sup>th</sup> century. In Becks Field, by the Severn in Shrewsbury, it grows on eroded banks of MG6 *Cynosurus cristatus* grassland.

One of the best sites to see it is Bridgnorth Cemetery, where it grows in abundance.



### *Saxifraga hypnoides* L.

#### Mossy Saxifrage

First record: Williams, c. 1800, 'amongst the stones near the north-west side of the Titterstone Clee Hill, near the top.'

Formerly present on Titterstone Clee, as an outlier of the montane populations in mid Wales. It is not apparent who first recorded it there: Joseph Babington wrote (in Plymley, 1803) 'this rare plant grows on the summit of the Titterstone Clee-hill. It is seen in most gardens forming a beautiful tuft, or an elegant edging to borders...' and a record in the *Botanist's Guide* (Turner & Dillwyn 1805) was by Arthur Aikin. Williams may therefore have been to see it at a later date rather than have discovered it there. Several other people also recorded it there, the last being either Fred Westcott in October 1842 ('on the stones of that part of the Clee hills called Hoar Edge, abundant') or George Jordan (publ. 1856) 'amongst the basaltic columns around the summit of the mountain.'

As a garden escape, it has been recorded at at Pulverbatch (R.D. Benson, 1894), Ludlow (A.W. Weyman, 1909) and Boningale (B.R. Fowler, 1979).

### *Saxifraga tridactylites* L.

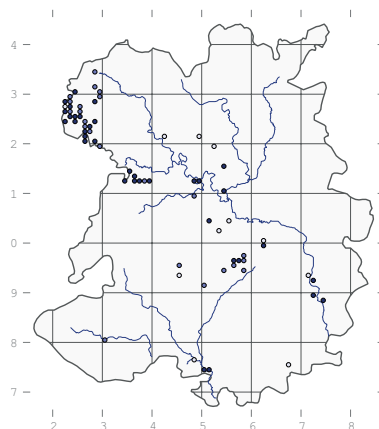
#### Rue-leaved Saxifrage

Native. Local. Stable. Axiophyte: rock exposures and walls.

First record: Williams, c. 1800, 'walls, roofs and paved courts, common.'

On limestone rock outcrops in open CG3 *Bromopsis erecta* at Ippikin's Rock and Moelydd, CG7 *Thymus polytrichus* at Presthope, and OV20 *Sagina procumbens* on walls at Haughmond Abbey (Trueman, 1981), where it has been known since 1841 (Leighton).

It is recorded on railway ballast at Shrewsbury (D.H. Wrench, 2004), Baschurch (E.B. Benson, 1895) and Oswestry (E.D. Pugh, 1983) and it was found to be abundant on an old tiled stable roof at Attingham Park in 2005. Whether it should count as an axiophyte is a moot point – there are more records for it in synanthropic sites than in natural ones, but often it is an attractive feature of ancient walls, which can be of some conservation value.



### *Chrysosplenium oppositifolium* L.

#### Opposite-leaved Golden-saxifrage

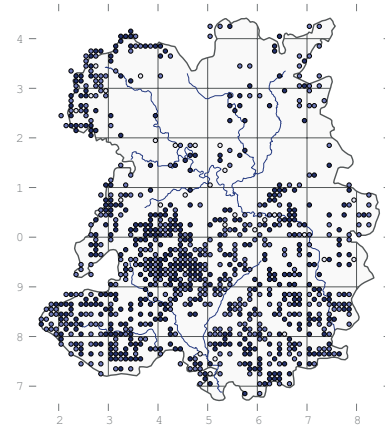
Native. Widespread. Stable. Wet woodland and flushes.

First records: Williams, c. 1800, 'In Eaton Mascott wood below Pitchford Forge; by the side of the brook in woods above and below Pitchford.'

Most typical of wet woodlands, where it occurs in flushes and along the sides of streams. It is generally found in woods on base-rich soils such as W6 *Salix × fragilis* in places like the Borle Brook at Defford and Redhill Coppice; W7 *Lysimachia nemorum* at Birchen Park, Fastings Coppice and Upper Vessons; W8 *Fraxinus excelsior* at Bushmoor Coppice, Chorley Covert, Earl's Hill and elsewhere; W9 *Sorbus aucuparia* in Betchcott Hollow; and in

M36 *Chrysosplenium oppositifolium* at Poles Coppice.

In open situations, it is common in flushes such as MG10 *Holcus lanatus* in Hope Coppice and M23 *Juncus effusus* in Ashes Hollow (C.M. Owen, 1983) and Upper Darnford (R. Tapper, 1983).



### *Chrysosplenium alternifolium* L.

#### Alternate-leaved Golden-saxifrage

Native. Local. Decreasing. Axiophyte: wet woods.

First record: Williams, c. 1800, moist woods, not uncommon.'

The habitat of this species is very similar to that of *C. oppositifolium*, but it is rarer in both frequency and abundance: it



*Saxifraga granulata* at Becks Field



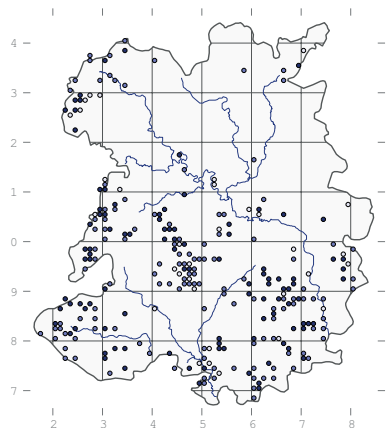
*Chrysosplenium alternifolium* at Hope

## Vascular plants

occurs in fewer sites and, when it does occur (inevitably with *C. oppositifolium* nearby), there is much less of it. The reasons for its relative scarcity are not obvious. It is nearly always found in ancient woodland sites and never in open situations. It is difficult to be certain of finding it in even well-known sites. Places where it has been seen several times include Beechfield Dingle (first recorded by W. Phillips in 1892), Candy Valley (W. Whitwell, 1865), by the Habberley Brook at Earl's Hill (Sinker & Perring, 1966) and Smethcott Dingle (W.E. Thompson, 1904). An easily accessible site is by the brook opposite the entrance to the Wildlife Trust's reserve at Hope Valley.

Most of its sites are W8 *Fraxinus excelsior* woods with just a narrow strip of wet alder woodland along the edge of a stream or brook. In some places this widens out to become clearly W6 *Salix* × *fragilis*.

There is some evidence of a decline in this species. Williams considered it to be 'not uncommon' in about 1800, but Leighton (1841) wrote 'not common.' There were many records in Sinker's Flora that have not been repeated, but it is easily overlooked. It may have gone from some lowland sites such as Shelton Rough, where it was recorded between 1841 (Leighton) and 1953 (H.F. Pendlebury). Some of the best sites for it are in the dingles in the west of the county, such as the one on the Welsh border at Upper Trefnant, where luxurious plants have leaves up to 56 mm across (SJ296103, 2009, BIRM).



### *Tolmiea menziesii* (Pursh)

Torrey & A. Gray

#### Pick-a-back-plant

Neophyte. Rare. Increasing. Woods.

First record: D.L. Buckingham, 2000, Leaton Knolls.

A garden escape that has recently started to turn up as naturalised in woods. Since 2000 it has been recorded

at Chorley Covert and Radlith; both W8 *Fraxinus excelsior* woods.

### *Tellima grandiflora* (Pursh)

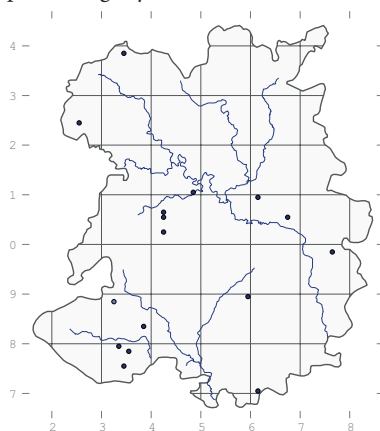
Douglas ex Lindley

#### Fringe-cups

Neophyte. Scattered. Increasing. Woodland and hedges.

First record: S.M. Nelson, 1982, Bishops Castle.

An uncommon garden escape that can become established in woodland and scrub. It was well naturalised in W8 *Fraxinus excelsior* woodland at Castle Dingle, Dudleston, in 2009. It possibly prefers slightly calcareous substrates.



## Crassulaceae

### *Crassula helmsii* (Kirk)

Cockayne

#### New Zealand Pigmyweed

Neophyte. Scattered. Increasing. Lakes and ponds.

First record: W.V. Prestwood, 1988, Haughton.

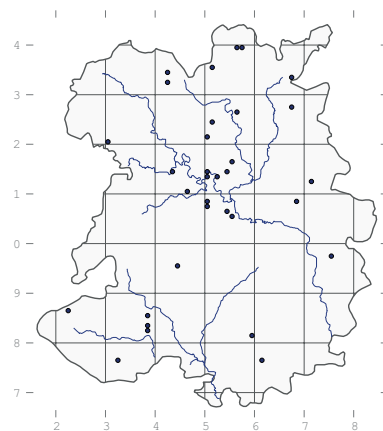
Native to Australia and New Zealand, and first established in the wild in Britain in the 1950s. It is widespread in garden ponds throughout the county and is occasionally found in the wild, in places like Bomere Pool (D.H. Wrench, 1995), Granville Country Park (A.K. Thorne, 2000) and Haughmond Hill.

Because it reproduces vegetatively from small fragments it is very difficult to eradicate from a site. It has caused particular controversy at Brown Moss, where it first arrived in 1991 and was spotted by Trueman, who immediately dug it up; but it was there again the following year, and attempts to control it since then have included spraying with herbicide, removing topsoil and even smothering it with black plastic sheeting.

None of this has succeeded in removing the *Crassula*, but many other

plants are destroyed in the process, possibly leading to the loss of some rare natives such as *Lythrum portula*. On the other hand, the disturbance has brought up seeds of other rare plants such as *Luronium natans*.

In many sites *Crassula helmsii* is well established, and there is little published evidence that it poses a threat to native plants. Its long flowering period and vigorous growth in eutrophic pools with few other aquatic plants can make a useful contribution as a nectar source.



### *Umbilicus rupestris* (Salisb.)

Dandy

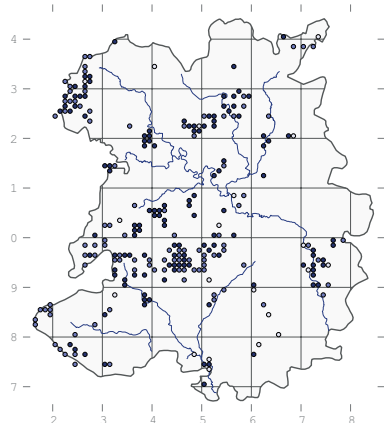
#### Navelwort

Native. Local. Increasing. Axioophyte: rock exposures, acid grassland, woodland.

First record (as *Cotyledon umbilicus*): Williams, c. 1800, 'rocks and old walls, common. On Hagham Hill etc.'

An evergreen perennial with a southerly, oceanic distribution – common in the south-west of Britain but becoming rare to the east and north of Shropshire. Its distribution within the county is similar, being largely on the hills of the south-west. Most sites are in woodland; it is possibly most abundant on the SW side of The Cliffe, in open birch woodland. On Pontesford Hill large plants with leaves over 11 cm across grow on steep banks in W10 *Quercus robur* woodland (SJ409056, J. Mobarak, 2013); on Oaks Hill it occurs in abundance on conglomerate outcrops within W17 *Leucobryum glaucum* woodland; and in many places it occurs on hedgerbanks within W21 *Crataegus monogyna* or W24 *Rubus fruticosus* scrub. On Haughmond Hill and Earl's Hill it grows in U1 *Rumex acetosella* grassland. Trueman (1981) found it in OV39 *Asplenium trichomanes* at Holloway Rocks at an altitude of 380 m, and it grows to about the same altitude at The Rock on the Stiperstones. The records suggest that it might be slowly expanding

its range, and many populations seem to be thriving, so it is quite possible that it is increasing overall.



***Sempervivum tectorum* L.**  
**House-leek**

Neophyte. Scattered. Stable. Walls and roofs.

First record: Leighton, 1841, 'house tops and walls; frequent, but most probably in no case wild.'

Frequently planted in churchyards and monuments such as Stokesay Castle (J.A. Thompson, 1995). It does not spread or establish itself in the wild, but it does sometimes persist in situations where it has been planted.

***Sedum spectabile* Boreau**  
**Butterfly Stonecrop**

Neophyte. Rare.

Just two records: by the old railway line in Oswestry (R.A. Dawes, 1998) and on waste ground at Waters Upton (2004).

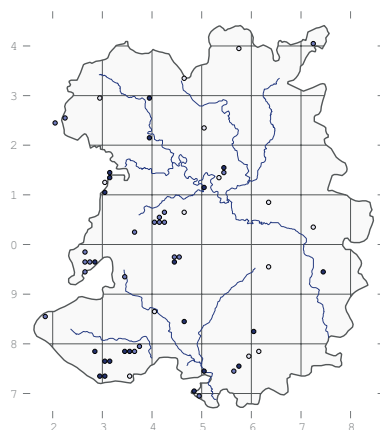
***Sedum telephium* L.**  
**Orpine**

Native. Local. Decreasing. Axiphyte: rock outcrops and acid grassland.

First records: Williams, c. 1800, 'rocks and old walls, not uncommon. Haghmon Hill, etc – Lyth Hill, etc.'

On rock outcrops in woodland and acid grassland. There are recent records for places like Coed-detton, Bulthy Hill, The Cliffe (M.S. Duffell, 2009) and Haughmond Abbey. It is also widely grown in gardens and naturalised on roadsides, as at Lower Hordley (SJ392294, P. Parker, 2007).

The subspecies *telephium* has been recorded (as *S. telephium* ssp. *purpurascens*) on a road verge at Richards Castle (C.M. Dony, 1950, LTN). This is the garden form, whereas ssp. *fabaria* (W.D.J. Koch) Syme has been recorded on Earl's Hill by B.R. Fowler (1980).



***Sedum kamtschaticum***  
**Fisher & C. Meyer**

**Kamchatka Stonecrop**

Neophyte. Rare.

Just two records: on railway sidings at Coton Hill (R.M. Stokes, 2005) and on pavements in Ruyton-XI-Towns (2008).

***Sedum spurium* M. Bieb.**  
**Caucasian-stonecrop**

Neophyte. Scattered. Stable. Churchyards and gardens.

First record: B.R. Fowler, 1978, 'on concrete blocks in Hubbal Lane, Tong'.

Barely naturalised as a garden escape or planted in churchyards. It has been recorded in churchyards at Wistanstow (A.P. Daly, 1986) and Little Dawley (R.M. Stokes, 2003) and at Rowton Castle.

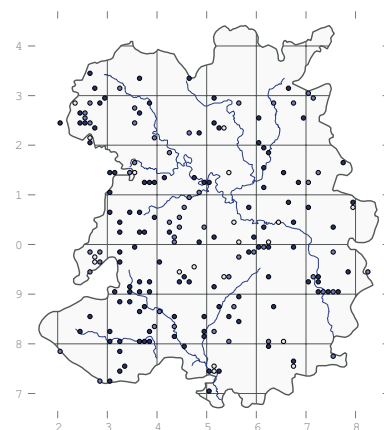
***Sedum rupestre* L.**

**Reflexed Stonecrop**

Neophyte. Widespread. Stable. Walls, waste ground, roadsides.

First record: Williams, c. 1800, 'walls and roofs of houses, common.'

There has been a degree of confusion between *S. rupestre* and *S. forsterianum*, which can be quite similar in appearance. Leighton (1841, p. 195) had to re-determine some records and doubtless mistakes still occur. On the whole, however, the habitat is a fairly reliable indicator of which species is present, with *S. rupestre* occupying the synanthropic situations on walls, roofs, waste ground, etc. Sometimes it is fairly obviously planted or has escaped, close to gardens, but other times it is well established far from any deliberate introduction site. There are luxuriant colonies on old concrete hard standings by the railway in Shrewsbury, for example. It is more widely recorded now than previously, but that is probably due to better recording.

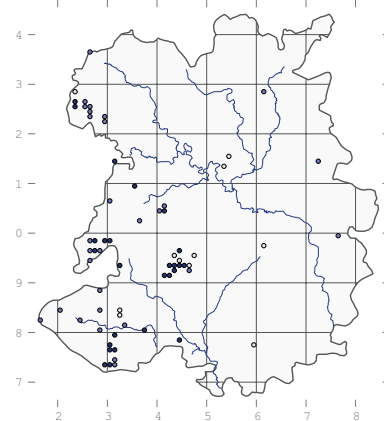


***Sedum forsterianum* Smith**  
**Rock Stonecrop**

Native. Local. Decreasing. Axiphyte: acid grassland, rock exposures and open woodland.

First record: L. Brown, 1726, Borough [Bury] Ditches.

On dry rock outcrops and stabilised screes, sometimes established on walls and quarry ledges, and occasionally cultivated on walls and rockeries (but far less often than *S. rupestre*). A typical site for it was Earl's Hill, where it grew in U1 *Rumex acetosella* grassland on loose scree and amongst boulders on the south and east sides of the hill. In recent decades this habitat has become very overgrown with hawthorn scrub and W8 *Fraxinus excelsior* woodland, and only small populations of *S. forsterianum* persist in the dense shade. It is occasional on the Long Mynd, where it occurs in some batches, notably Ashes Hollow and Minton Batch, as well as on roadside banks in Church Stretton. Other places with recent records include Coed-detton, Craig Sychtyn, Pentre Hill, Rock of Woolbury, the Lump at Priestweston (C. Walker, 1994) and Whittery Wood. Sites where it has been recorded in the past but not recently include Caer Caradoc (last seen in c. 1841), Haughmond Hill (W. Phillips, 1878) and Titterstone Clee (G. Jordan, 1856).

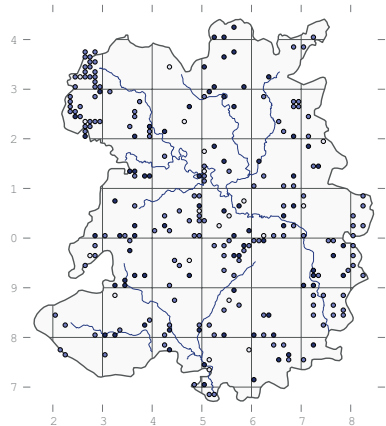




## *Sedum acre* L. Biting Stonecrop

Native. Scattered. Stable. Rocks, walls, waste ground.

First record: Williams, c. 1800, 'walls, rocks and sandy banks, common.'



A drought-resistant perennial which is uncommon on natural rock exposures, but widespread on waste ground and walls. At Presthope it grows on limestone exposures on the top of Wenlock Edge in CG7 *Thymus polytrichus*, and at Jones's Rough it occurs in an area of CG2 *Avenula pubescens*. In many places it grows in equivalent man-made habitats such as ancient walls at Haughmond Abbey (first recorded here by Leighton in 1841 and still present), the old railway



*Sedum forsterianum* on Earl's Hill



*Myriophyllum spicatum* in the Severn

station at Oswestry (E.D. Pugh, 1983), and Stokesay Castle (J.A. Thompson, 1995). George Jordan recorded it on the scree at the summit of Titterstone Clee (at about 500 m altitude) in the early 19<sup>th</sup> century, but it has never been seen here since, and the habitat is quite different. A good place to look for it is at Ludlow Castle, where it was first recorded by F. Westcott in 1842 and is still present (A.K. Thorne, 2001).

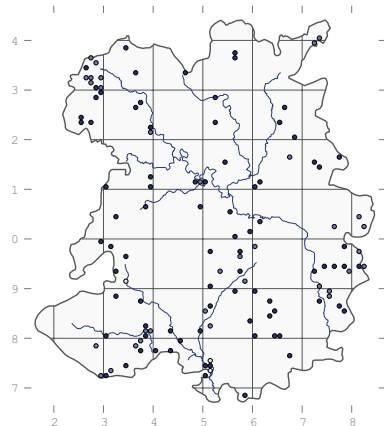
## *Sedum album* L. White Stonecrop

Archaeophyte. Scattered. Increasing. Walls, pavements, quarries.

First records: Leighton, Salwey & McGhie, c. 1841, walls about Ludlow & Ludford.

Primarily a garden plant, grown in rockeries and pots, and often established (sometimes with a little encouragement) on walls and elsewhere. A typical habitat for it is in U1 *Rumex acetosella* grassland in places like Abbot's Castle Hill but, of the sites recorded with habitat notes, 28 are walls, 3 pavements and old runways, 3 quarries, 2 railways, 8 are sandy or rocky roadside banks, 2 are roofs and one is a churchyard. Many of the sites are distinctly calcareous, particularly limestone quarries such as Blackbridge (first recorded there by E.D. Pugh in 1977) and Nantmawr Quarry.

It does occur in more acid sites such as at Prees Heath, but it is almost entirely confined to the concrete of the old airfield. Leighton described it as rare, and it was much more sparsely recorded in Sinker's Flora; the difference between then and now cannot be entirely due to recording effort, so perhaps it is becoming naturalised. Good places to look for it include Haughmond Hill and walls in Ludlow, both of which have a number of other stonecrops present.

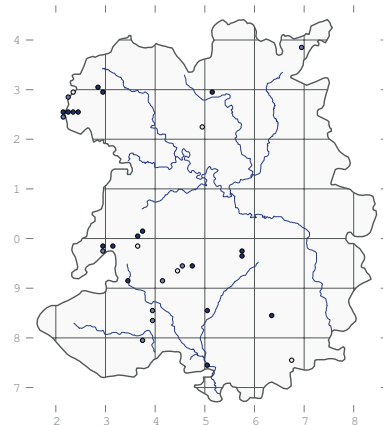


## *Sedum anglicum* Huds. English Stonecrop

Native. Local. Stable. Rock exposures, walls.

First record: Williams, c. 1800, 'on the Stiperstones rocks and amongst the stones below.'

On thin soils over rock outcrops, most commonly on base-rich rock or even limestone. It was recorded in CG10 *Helianthemum nummularia* in Minton Batch by R. Tapper in 1983, and it has been recorded a couple of times in Church Stretton, in Rectory Walk in 1850 (R.M. Norman, NOT) and on a wall in Trevor Hill in 1977 (H.M. Davidson). It is also well known at Allt-y-rhiw (first recorded by E.D. Pugh in 1980), Caer Caradoc (A.K. Thorne, 1981), Craig Sychtyn (E.F. Jones, 1867), Bryn Uchaf, Moelydd (both G.M. Stone, 1996), Coed-y-coch (Salwey, 1855), Priest Weston (J.M. Roper, 1976) and Stapeley Hill (Perring, 1975). It is fairly widespread on the Stiperstones (Thorne, 2002). It is now more widely recorded as planted, for example at Ludlow Swimming Baths, More Church (both J.A. Thompson, 1998) and Brand Hall (A.P. Bell, 1978). For a time it grew on chippings at Oswestry Railway Station (Pugh, 1976 to R.A. Dawes, 1993). A good place to look for it is at Priest Weston, where Roper (1978) described it as 'extremely general... on rock exposures, shales, road banks and floor of tracks.' Williams's record suggests that it used to grow at a height of over 500 m on the Stiperstones.



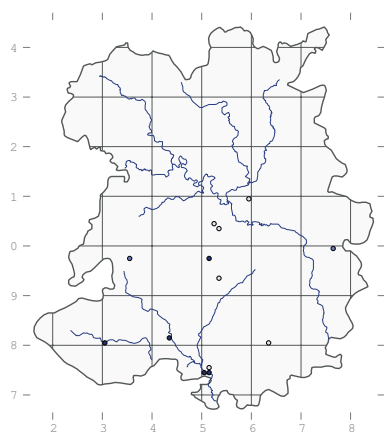
## *Sedum dasyphyllum* L. Thick-leaved Stonecrop

Neophyte. Rare. Increasing. Walls.

First records: Williams, c. 1800, 'walls about Mr Ottley's house at Pitchford. Old walls in Uppington.'

Planted or naturalised on walls, most persistently in Ludlow, where it was first recorded by H. Spare in

Leighton's Flora, and still grows at the castle and on other walls in the town (R.F. Shoubridge, 2005). R.M. Serjeantson found it still at Pitchford Church in 1882. Otherwise it has only ever been recorded once at each site: Badger (O.M. Feilden, 1910), Chatwall, Clun (J. Clayfield, 2003), Farlow (J.B. Duncan, 1903), Longville in the Dale (A. Ley, 1904), Stokesay (N. & M.E. Sturt, 1997) and The Bog (C.M. Dony, 1949, LTN). There are more recent records for it now than at any comparable time in the past, so it is presumably increasing slightly. Restricted to the lowlands, up to about 285 m at Chatwall (SO514975, 2011). The best place to see it is at Ludlow Castle, where it was described as plentiful on the battlements by Dr & Mrs Sturt in 1997.



## Haloragaceae

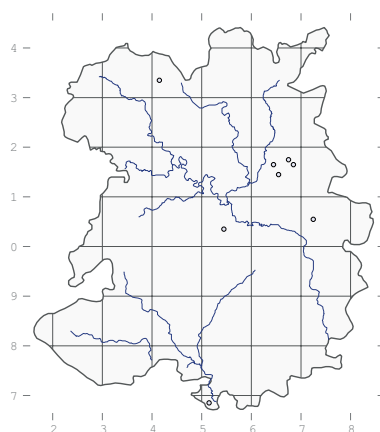
### *Myriophyllum verticillatum* L.

#### Whorled Water-milfoil

Native. Last recorded in 1899. Pools, ditches and canals.

First records: Williams, c. 1800, 'at the west end of Blackmere near Ellesmere; ditches below Eyton on the Wildmoors; in a pond between Golden and the Watling Street road.'

A plant of calcareous ponds and ditches, formerly known in the Weald Moors, where it was last seen in the Newport Canal at Kynnersley (W. Phillips, 1897). There is also an old record of it in the Leominster Canal at Woofferton (M. McGhie, 1841). In 1897 W.H. Painter found it in the mill pond at Hem Mill. Since then there have been a couple of records of it in upper reaches of the Severn in the 1970s (see Sinker *et al.* 1985, p. 226) but these should be considered unconfirmed. The only current site is at Preston Montford, where it was introduced into a pond from an unknown source.



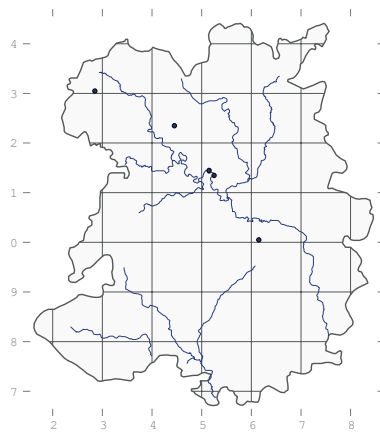
### *Myriophyllum aquaticum* (Vell.) Verdc.

#### Parrot's Feather

Neophyte. Scarce. Casual. Ditches, ponds, canals.

First record: R.M. Walls, 1990, 'in a ditch near Fenemere, SJ443232.'

An aquarium plant that is occasionally found in the wild, specifically in the derelict Shrewsbury Canal, in a farm pond near Oswestry (M. Wainwright, 1994), at Monkmoor Sewage Works, and in a pond at a caravan park in Much Wenlock (R. Mileto, 2012); probably not persisting for long in any of these sites.



### *Myriophyllum spicatum* L.

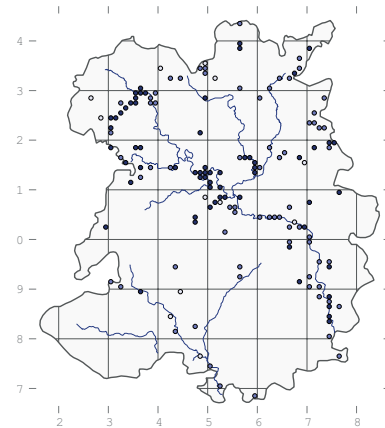
#### Spiked Water-milfoil

Native. Local. Stable. Rivers, ditches, canals and pools.

First record: T.W. Wilson, 1835, Oss Mere (SHY).

In eutrophic rivers such as the Severn, where it can tolerate low light levels in silty water and large fluctuations in water level. It used to be frequent in the Montgomery Canal and several other canals, but is becoming quite rare as boating levels rise. It also used to occur in several of the meres, but the only one with a recent record is Brown Moss (Perring, 1993). The reason for its decline is not entirely

apparent, but could include shading of the shallow waters around the margins and grazing by water fowl or stocked fish. The overall distribution appears to be stable but that could be partly due to better recording of rivers, although it also turns up in gravel pits and new ponds. A typical vegetation community for it is A8 *Nuphar lutea* community, recorded at Betton Pool by M.J. Wigginton in 1979. A good place to see it is in the River Severn in Shrewsbury, where it has been recorded since Leighton's time.



### *Myriophyllum alterniflorum* DC.

#### Alternate Water-milfoil

Native. Scarce. Stable. Axiophyte: lakes, ponds and streams.

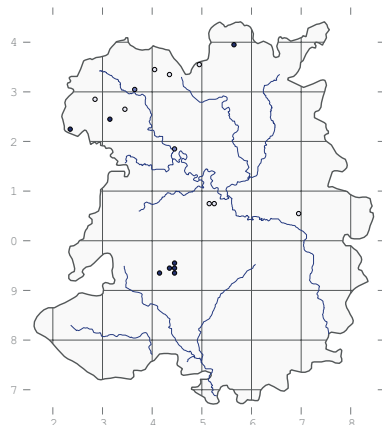
First record: Leighton, 1832, Berrington Pool (BM).

Andrew Bloxam is sometimes credited with the first published British record (Clarke 1900), for ponds by the side of the canal near Whixall Moss and Cole Mere in 1836, although these do not stand as the first county record because Leighton had collected it before then. It is a plant of clear, oligotrophic waters, and was once quite widespread in the English lowlands but is now rare. However, it is still frequent in upland areas. It grows in several places on the Long Mynd, in pools on the golf course (A. Ashwell, 1982), in the reservoir in New Pool Hollow and in some of the Pole Cottage Pools (A.K. Thorne, 1999). It is curious that it was not found on the Long Mynd before 1982, which suggests that it may have colonised there recently.

In the lowlands it occurs sporadically at Brown Moss, in A2 *Lemna minor* vegetation in Pool 6, and in the River Tanat at Llanyblodwel. It used to grow in the Montgomery Canal at Maesbury Marsh (R. Dave, 1986) but it has gone from there now. In the distant past it was common in the Meres, including

## Vascular plants

Betton Pool (Hamilton, 1896), Cole Mere (last seen by H. Bidwell in 1842), Morda Pool (Leighton, 1841), Rednal Moss (Leighton, 1841) and the Mere at Ellesmere (W.E. Beckwith, 1881). There were a couple of isolated sites at Madeley Court (W.H. Painter, 1909) and in the River Perry at Fitz (M.J. Connell, 1977).



## Vitaceae

### *Parthenocissus quinquefolia* (L.) Planchon Virginia-creeper

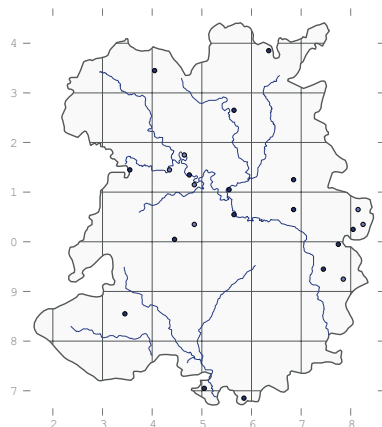
Neophyte. Scattered. Increasing. Gardens, waste places.

Frequently grown in gardens and occasionally persisting in the wild. It is recorded as planted at Stokesay Castle (J.A. Thompson, 1995) and St Leonard's Church, Ludlow, and established by the Severn at Bewdley, in Nills Hill Quarry, and covering a ruined house near Stoney Stretton.

## Fabaceae

### *Robinia pseudoacacia* L. False Acacia

Neophyte. Scattered. Planted. Roadsides, gardens, parkland and woods.



A common tree in larger gardens, but not usually recorded in such situations.

Sometimes it is planted in woods, as on the Isle, Bicton (M.J. Connell, 1976). The first record was by Perring in 1972 at Attingham Park, where it still occurs and is spreading by seed (Whild & Lockton 2005). It is also often planted in churchyards, as at Burford (S. O'Donnell, 1995) and Little Dawley (J.A. Thompson, 2000). There is no evidence of it spreading into the wild.

### *Galega officinalis* L.

#### Goat's-rue

Although it is naturalised in the south-east of England, the only records of this species in Shropshire are from places where it has been planted, at Stokesay Church in 1950 (C.M. Dony, LTN) and growing as a weed in the garden of Shrewsbury Abbey in 2005 (D.H. Wrench).

### *Colutea arborescens* L.

#### Bladder-senna

Neophyte. Rare.

A garden escape, growing on the edge of a paddock near the weir in Shrewsbury since 1993 (J. Martin) and by a track near a landfill site at Buildwas in 1997 (R.M. Stokes).

[*Astragalus danicus* Retz., Purple Milk-vetch

In 1864 there was apparently a report in the *Gardener's Chronicle* of this species at Quatford. It seems possible, as the plant grows in calcareous grassland, and it occurs not far away near the mouth of the Severn, but as it stands there seems insufficient evidence.]

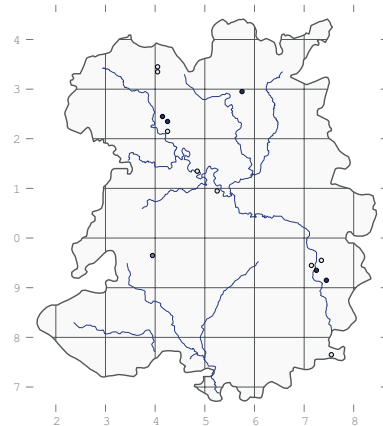
### *Astragalus glycyphyllos* L. Wild Liquorice

Native. Scarce. Stable. Axiophyte: grassland.

First records: Williams, c. 1800, 'by the side of the turnpike road below Fox Farm,' and 'in a gravel pit at Round Hill.'

In scrubby grassland and woodland edges in a few scattered places around the county. Current sites include High Rock, Bridgnorth (J. Clayfield, 2005), where it was first recorded by W.E. Beckwith in 1880; Stanwardine in the Fields (P. Parker, 2007), where it has been known since 1982; and The Berth (Parker, 1991), where W. Phillips found it in 1892. There are also several more recently discovered sites such as Bridgnorth Cemetery (D.H. Wrench, 2009), Dudmaston (J. Clayfield, 2000)

and Hawkstone Park (A.P. Bell, 1987). These compensate for the losses of old sites, meaning the population is stable overall, but populations are small.

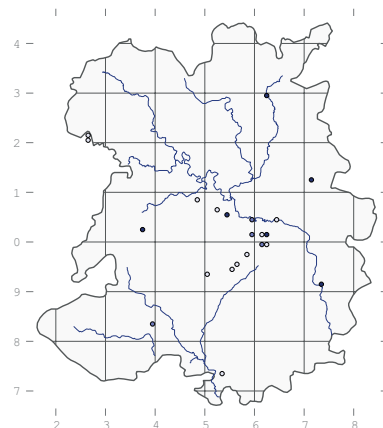


### *Onobrychis viciifolia* Scop. Sainfoin

Neophyte. Scattered. Stable. Sown grassland and arable fields.

First records: Williams, c. 1800, 'pastures about Lutwyche and Easthope' and 'on the bank between Newman Hall and Eaton Brook near Berrington.'

It is possible that the putatively native (or arguably archaeophyte) ssp. *collina* (Jord.) P.D. Sell grew on Wenlock Edge in the past, but no specimens by Williams or other early botanists have yet been traced. By the late 19<sup>th</sup> century it was only present as an introduction; Beckwith (1882) found it only along the railway between Much Wenlock and Buildwas. It is now introduced in seed mixes, and has been found at Granville Country Park (R.M. Stokes, 1998), on a reclaimed spoil heap at Snailbeach (A.P. Dawes, 2002), in Farley Quarry, in a bird seed headland at Cound Stank, and on the verge of the Hodnet bypass at Wollerton (D.H. Wrench, 2007). Plants from Granville appear to be ssp. *viciifolia* P.D. Sell (det. D.A. Pearman), although they are somewhat intermediate between that and ssp. *decumbens* P.D. Sell, and those taxa may warrant no more than varietal status.



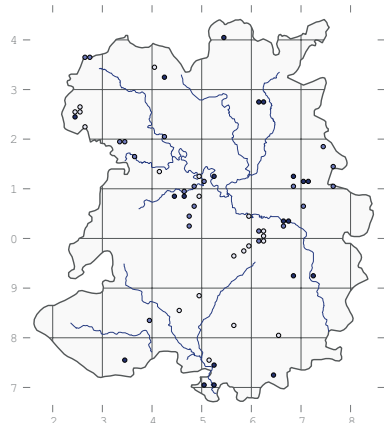


***Anthyllis vulneraria* L.****Kidney Vetch**

Native. Scarce. Decreasing. Axiophyte: limestone grassland, quarries, railways.

First record: A. Aikin, 1796, Llanymynech Hill.

An uncommon native plant of limestone grassland, but also rather frequently introduced in seed mixes on roadside verges (usually *ssp. carpatica* (Pant.) Nyman). Native populations occur on Moelydd, where it was first recorded by E.F. Jones in 1892, and it still occurs in CG2 *Avenula pubescens* on the cliffs at Jones's Rough and in Nantmawr Quarry (R.A. Dawes, 2011); and in Ironbridge Gorge, where it was first recorded on Benthall Edge by F. Dickinson in 1841 and it still grows in CG3 *Bromopsis erecta* on Lincoln Hill. Most other recent records are for roadsides such as the Hodnet (D.H. Wrench, 2007) and Shrewsbury (2003) bypasses, and a wide verge at Trench (2004). For over a hundred years it has been known on the Old Potteries Railway at Redhill (W. Phillips, 1878 – I.S. Thompson, 2005). The origin of the plants at Wood Lane Gravel Pit and other quarries is uncertain.

***Lotus tenuis* Waldst. & Kit ex Willd.****Narrow-leaved Bird's-foot-trefoil**

Native. Rare. Casual. Waste ground and roadsides.

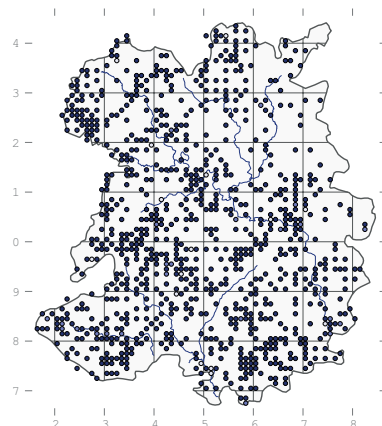
First record: W.H. Painter, 1884, Whitchurch (ABS).

On the edge of its range in Shropshire and only occurring as a casual here. There are recent records of it on the bridge over the Bagley Brook at Stanwardine Park (P. Parker, 1991 & 1996) and in the car park at The Bog (T.J. James, 2010). Older records are for the Cambrian railway at Welsh Frankton (O.M. Feilden, 1920) and Kinsley Wood (G.P. Richards, 1965).

***Lotus corniculatus* L.****Common Bird's-foot-trefoil**

Native. Widespread. Stable. Grassland.

First record: Williams, c. 1800, 'meads, pastures, borders of fields and thickets, common.'



In unimproved and semi-improved grasslands, ranging from damp and calcareous to dry and acid. It is ubiquitous in CG2 *Avenula pubescens* and MG5 *Festuca rubra* (all three subcommunities) throughout the county, and it is recorded in CG3 *Bromopsis erecta* at Hilltop Meadow and Lea Quarry; CG10 *Helianthemum nummularia* on Llyncllys Hill; MG1 *Arrhenatherum elatius* at Ropewalk Meadow and Windmill Hill; MG4 *Sanguisorba officinalis* at Lord's Meadows (D.H. Wrench, 1995); MG6 *Cynosurus cristatus* at Meverley Farm and Ruewood; MG9 *Deschampsia cespitosa* at Oss Mere; U1 *Rumex acetosella* at Prees Heath; and U4 *Agrostis capillaris* in Cwm Collo.

Although it is largely replaced by *L. pedunculatus* in wetter habitats, it does occur in a range of mire communities, and extra care needs to be taken to distinguish the two. It has been recorded in M6 *Carex echinata* and M23 *Juncus effusus* in Colliersford Gutter (R. Tapper, 1983); M24 *Cirsium dissectum* at Black Coppice; M27 *Filipendula ulmaria* at Cole Mere; and M35 *Montia fontana* in Carding Mill Valley, Lightspout Hollow and Wild Moor (the last 3 by Tapper, 1983). On the edges of pools at Brown Moss it sometimes occurs in OV35 *Lythrum portula* community. There is only one record of it in a wood, in W10 *Quercus robur* at Bannister's Coppice, where it grew in fairly open conditions along a muddy ride. It is not restricted by altitude in the county, being recorded in suitable habitat near the summits of all the higher hills. The introduced *L. corniculatus* var. *sativus* Hyl. is a more robust plant that is often introduced

in seed mixes; first recorded in 1995 at Llyncllys Quarry and now found in more than a dozen places around the county.

***Lotus pedunculatus* Cav.****Large Bird's-foot-trefoil**

Native. Widespread. Stable. Damp grassland, lake margins and upland flushes.

First record (as *L. corniculatus* var.  $\gamma$ ): Williams, c. 1800, 'common. Moist hedges and moors.'

Often recorded in MG5 *Festuca rubra* grassland, especially MG5c *Danthonia decumbens* meadows such as Cleeton St Mary, Glasshouse Green, Lubberland, Rushbury, Silvington Hill and Walkmills (all D.H. Wrench *et al.*, 1994-5); in MG8 *Caltha palustris* grassland at Meverley Farm, Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* grassland at Hill Houses; and MG10 *Holcus lanatus* rush-pasture at Brown Moss, Larkfield Farm (Trueman, 1981) and Fenemere (C. Walker, 1988). It is ubiquitous in stands of M22 *Juncus subnodulosus* and M23 *Juncus effusus*; and has been recorded in an M10 *Carex dioica* flush at Shirlett Gutter (Trueman, 1980); M15 *Trichophorum germanicum* at Cramer Gutter; M25 *Molinia caerulea* and M27 *Filipendula ulmaria* at Black Coppice; M29 *Potamogeton polygonifolius* on the Long Mynd (R. Tapper, 1983); and M35 *Montia fontana* at Boiling Well (Trueman, 1980). In the Old River Bed it grows in OV26 *Epilobium hirsutum*, and on the margins of Marton Pool, Chirbury, it was recorded by M.J. Wigginton in 1979 in OV30 *Bidens tripartita* vegetation. At Brown Moss it is frequent in OV31 *Rorippa palustris* on the drawdown zone around a fluctuating pool.

In swamps, *L. pedunculatus* completely replaces *L. corniculatus*, and it has been recorded in S3 *Carex paniculata* at Fenemere (C. Walker, 1988); S7 *Carex acutiformis* in the Old River Bed; S9 *Carex rostrata* at Berrington Pool; S14 *Sparganium erectum* at Betton Pool (both Wigginton, 1979); S26 *Phragmites australis* at Black Coppice; and S27 *Comarum palustre* at Berrington Pool (Wigginton, 1979). It must have declined historically as a result of land drainage, and is now noticeably scarce in the more intensively farmed parts of the county. A good place to see it is at Brown Moss, where a range of growth forms can often be seen, as well as *L. corniculatus*.

## *Ornithopus perpusillus* L.

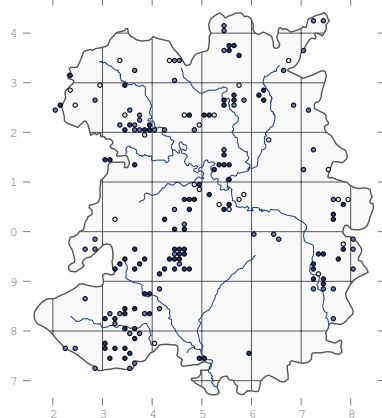
### Bird's-foot

Native. Local. Stable. Axiophyte: acid grassland.

First record: J. Babington, 1803, 'common on the top of Whitcliffe.'

Being one of the small group of perennial U1 *Rumex acetosella* grassland specialists, this plant is in leaf for most of the year and is easily spotted in suitable habitat. It is not uncommon on hills of neutral to acid rocks, especially on free-draining Longmyndian shales in places such as the Long Mynd, Haughmond Hill, Lyth Hill and Sharpstones, but also on sandstone such as at Grinshill Hill (D.H. Wrench, 2007) and Bridgnorth Cemetery. In the lowlands it occurs on sandy, free-draining grass-heaths such as at Attingham Park, Knockin Heath and Prees Heath. Although it is mostly restricted to U1, it does persist where this vegetation type grades into MG5 *Festuca rubra* grassland, especially on ant hills, and into more ruderal vegetation of disturbed soils such as field margins and pathways.

Although some old sites have been lost, there are at least as many current sites for it as at any time in the past, so it appears to be thriving despite the relaxation of grazing in some areas. Good places to see it include Ryton churchyard (SJ760027) where it was abundant in the grassland and along gravel paths in 2008, and Haughmond Hill, where it is frequent in short grassland and around rock outcrops.



[*Hippocrepis comosa* L., Horseshoe Vetch

Recorded by Andrew Bloxam 'near Ellesmere' (in Leighton 1841). Sinker (1985) ignores this record, and it does seem a little unlikely.]

## *Securigera varia* (L.) Lassen

### Crown Vetch

Neophyte. Rare. Stable. Grassland.

First record: W. Mathews, 1849, River Severn at Dowles (WOS).

An introduction from southern Europe, naturalised in one place on the bank of the Severn north of Bewdley, at SO781761. It is an old garden escape or crop contaminant, and it is currently growing in a scrubby patch of MG1 *Arrhenatherum elatius* grassland.

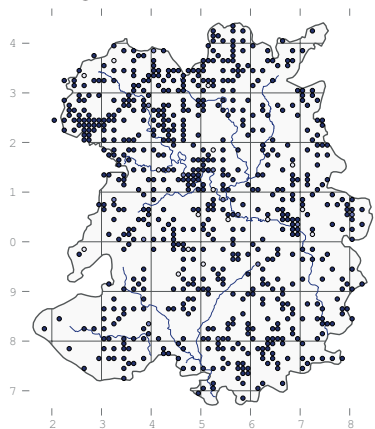
[*Vicia orobus* DC., Wood Bitter-vetch  
Recorded at Whitcliffe by H. Spare in Leighton (1841), but very unlikely.]

## *Vicia cracca* L.

### Tufted Vetch

Native. Widespread. Stable. Grassland, swamps and fens.

First record: Williams, c. 1800, 'meadows and hedges, common.'



A common plant on roadsides and in meadows, recorded in CG3 *Bromopsis erecta* grassland at Hilltop; MG1 *Arrhenatherum elatius* on road verges at Redhill, Roman Bank and elsewhere; MG4 *Sanguisorba officinalis* at Lord's Meadows (D.H. Wrench, 1995); MG5 *Festuca rubra* everywhere; MG6 *Cynosurus cristatus* at Molverley Farm; and MG10 *Holcus lanatus* at Fenemere (C. Walker, 1988).

In mires it is found in M22 *Juncus subnodulosus* at Morton Pool (Wrench, 1991), Sweeny Fen and Crose Mere; and in M23 *Juncus effusus*, M24 *Cirsium dissectum* and M27 *Filipendula ulmaria* at Black Coppice. At Fenemere it is recorded in S3 *Carex paniculata* (Walker, 1988) and it has been found in S14 *Sparganium erectum* at Berrington Pool; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* in the Shrewsbury Canal at Wappenshall; and S27 *Comarum palustre* at Berrington Pool.

It is not common in woodland, but it has been recorded in W1 *Salix cinerea* scrub at Berrington Pool and in W8 *Fraxinus excelsior* hedges at Henley. Its distribution shows a slight preference for calcareous habitats, and a good place to look for it is along the Montgomery Canal, where there are many suitable habitats for it.

## *Vicia sylvatica* L.

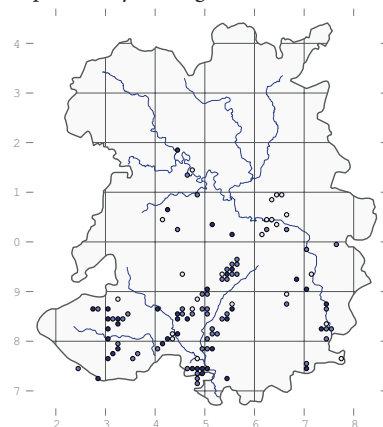
### Wood Vetch

Native. Local. Decreasing. Axiophyte: woods and hedges.

First record: L. Brown, 1726, 'about Bishops Castle.'

Largely restricted to ancient W8 *Fraxinus excelsior* and W10 *Quercus robur* woods, but usually only on the edges of roads and rides or on hedgebanks at the woodland edge. It is not restricted to north-facing slopes, but it does prefer humid, shady places. It also seems to benefit from soil disturbance, which may be one of the reasons that it has been declining – most ancient woods currently receive very little management. It is now more common in mixed or coniferous woods such as Bringewood Chase, Bury Ditches, Easthope Wood and Stoke Wood.

There are old records for places like Tick Wood (W.H. Painter, 1901), Loamhole Dingle (W.E. Beckwith, 1880) and Buildwas Park (Beckwith, 1880). The most northerly site for it was at Shelton Rough, where it was first recorded by J. Evans in 1805 and last by W.G. Cross in 1944. A good place to see it is alongside the forestry track at Nortoncamp Wood, where it grows on exposed clay cuttings.



## *Vicia hirsuta* (L.) Gray

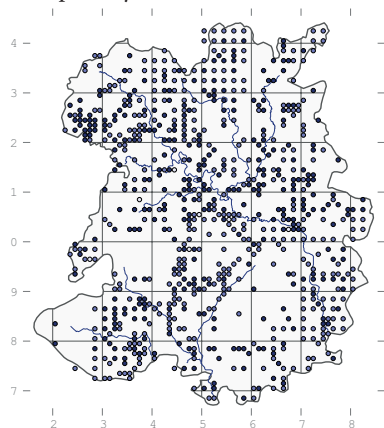
### Hairy Tare

Native. Widespread. Stable. Roadsides, waste ground and grassland.

First record (as *Ervum hirsutum*): Williams, c. 1800, 'cornfields, hedges and thickets.'



On bare ground and grassy roadside verges, in quarries, churchyards and neglected meadows. Typically in MG1 *Arrhenatherum elatius* grassland, as at Blackfriars Field in Shrewsbury, or in OV19 *Tripleurospermum inodorum* and OV23 *Dactylis glomerata* at Tong and Newport (both Trueman, 1981). As an annual it requires bare ground for germination but it is now rare in arable fields due, presumably, to its susceptibility to herbicides.

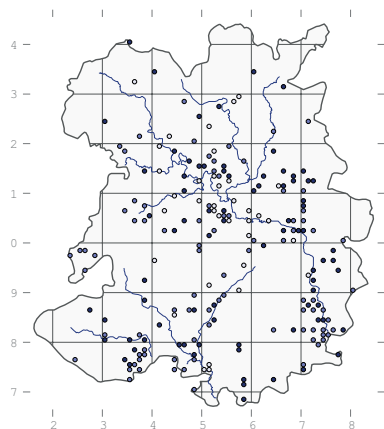


***Vicia tetrasperma* (L.) Schreb.  
Smooth Tare**

Native. Local. Stable. Roadsides, waste ground and grassland.

First record (as *Ervum tetraspermum*): Williams, c. 1800: 'cornfields, hedges and thickets.'

In similar places to *V. hirsuta*, usually germinating on bare ground and then scrambling over tall grassland, arable crops or low shrubs. It is closely associated with the river valleys, for reasons that are not known – possibly just reflecting the more base-rich soils that occur there. It is usually found on dry, disturbed or eroded ground. In 2009 I.P. Green reported it to be abundant on the edge of an arable field at Little Weston, but it is not otherwise noted as an arable weed.



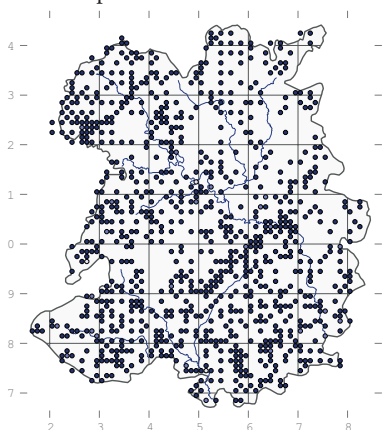
***Vicia sepium* L.**

**Bush Vetch**

Native. Widespread. Stable. Roadsides, scrub, grassland.

First record: Williams, c. 1800: 'hedges, common.'

Frequent on road verges and at the base of hedges, along paths and in woodland edges, especially on damp soils. It is most common in MG1 *Arrhenatherum elatius* grassland on roadsides and in overgrown fields throughout the county, and it is recorded in MG5 *Festuca rubra* grassland at Stretton Westwood (D.H. Wrench, 1995), in OV26 *Epilobium hirsutum* tall herb alongside a brook at Longford, and in W8 *Fraxinus excelsior* woodland at Llyncllys Hill and Wilderhope.



***Vicia sativa* L.**

**Common Vetch**

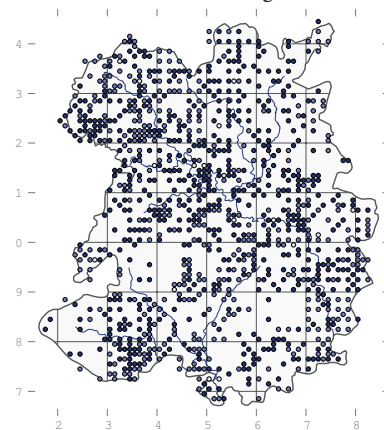
Native. Widespread. Stable. Grassland, roadsides and quarries.

First record: Williams, c. 1800: 'pastures and thickets.'

The native plant is *V. sativa* ssp. *nigra* (L.) Ehrh., which is found in short grassland, typically U1 *Rumex acetosella* in places like Attingham Park and Prees Heath, or in MG5 *Festuca rubra*, as on a roadside verge at Guilden Down in 2003.

The introduced varieties *sativa* and *segetalis* (Thuill.) Gaudin probably account for most of records of it on roadsides and neglected meadows such as MG1 *Arrhenatherum elatius* grassland at Blackfriars; OV10 *Senecio vulgaris* vegetation at Shifnal (Trueman, 1981); and OV23 *Dactylis glomerata* at Newport. It was probably also a sown variety in MG10 *Holcus lanatus* rush-pasture at Brown's Corner (Trueman, 1981). Subspecies *nigra* has been recorded since 1835 (by W.A. Leighton at Upper Berwick, SHY), ssp. *sativa* since 1988 (Trueman at

Crudgington) and ssp. *segetalis* since 1977 (W.E. Hutton at Bridgnorth).



***Vicia lathyroides* L.**

**Spring Vetch**

Native. Rare. Axiphyte: acid grassland and heath.

First record: Anon., 1930, Prees Heath (SHY).

Primarily a coastal plant which occurs in a few places inland, especially on dry, sandy soils. It has been reliably recorded in just five sites in the county: apart from the anonymously collected specimen from Prees Heath, it was found in a tree nursery at nearby Prees Higher Heath (J.M. Hooson, conf. C. Walker, 1994) and on the dry, sandy floor of an old quarry on Clunbury



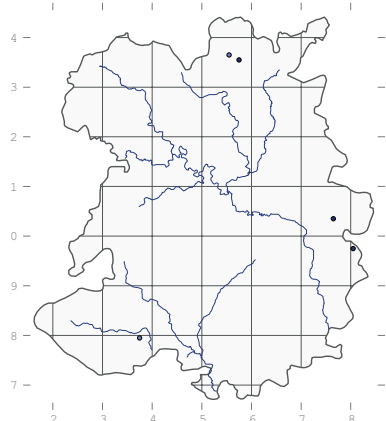
*Lathyrus pratensis* (Dan Wrench)



*Ornithopus perpusillus* at Hatton Grange



Hill in 1980 (M. Williams). At Hatton Grange it was found by E.M. Rutter and M.H. Bigwood in 1960 and it was still present in 2012 along a track known as Sandy Lane (SJ760034); and finally at Rudge (SJ803978) it was found in 1978 by B.R. Fowler in a sloping field of MG7e *Lolium perenne* grassland (Trueman, 1981), and it was still there in 1996 (R.M. Stokes).



[*Vicia lutea* L., Yellow Vetch

Recorded by W. Phillips at Eyton (Lydbury North) in 1892 (*Record of Bare Facts* 2, 1893), but without comment and it was probably just a typographical error for *Viola lutea*.]

### *Vicia faba* L.

#### Broad Bean

Widely cultivated in arable fields and gardens, and occasionally recorded as a casual on road verges, waste ground and by rivers, but it does not persist.

***Lathyrus linifolius*** (Reichard)  
Bässler

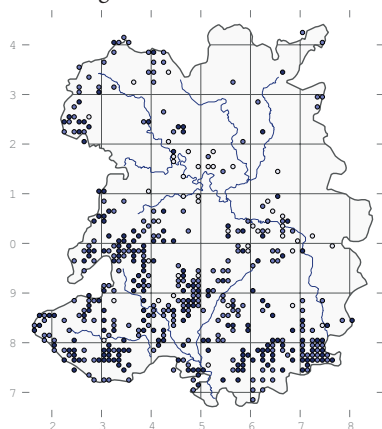
#### Bitter-vetch

Native. Local. Stable. Axiphyte: woodland and grassland.

First record: L. Brown, 1726, 'in ye woods on Old Church Moor, near Stretton.'

A characteristic plant of MG5c *Danthonia decumbens* grassland in places like Bennet's End Bridge, Eight Acre Farm, Rushbury, Glasshouse Green and Cleaton St Mary (all D.H. Wrench, 1994-5). It is also common on woodland edges and shady road verges, usually W8 *Fraxinus excelsior* woodland, as at Wilderhope, but also sometimes W10 *Quercus robur* woodland. Although it is usually considered to be a calcifuge, it is recorded on most of the limestone hills in the county, including Harton Hollow on Wenlock Edge and Llynclys Hill. Good places to look for it include Shelve Pool, where it has been recorded many times since 1967 (Mr Ashwell), and in the churchyard at St Margaret's,

Ratlinghope. Although it has gone from numerous sites in the lowlands, many of the losses were a long time ago and there is no evidence that the decline is continuing.



### *Lathyrus pratensis* L.

#### Meadow Vetchling

Native. Widespread. Stable. Grassland, woodland, fen.

First record: Williams, c. 1800: 'meadows and hedges, common.'

A scrambling perennial herb that is common in a wide variety of habitats, from bare ground in quarries to swamps and fens. It is most often recorded in mesotrophic grassland, especially MG5 *Festuca rubra* (all three subcommunities) throughout; but also in MG1

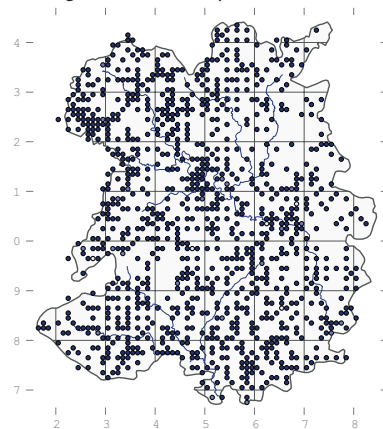
*Arrhenatherum elatius* on many roadside verges; MG6 *Cynosurus cristatus* at Molverley Farm; and MG8 *Caltha palustris* at Molverley Farm, Morton Pool (D.H. Wrench, 1991) and Ruewood.

The other common habitat for it is base-rich mires such as M22 *Juncus subnodulosus* at Sweeny Fen, Trefonen Marshes and elsewhere; M23 *Juncus effusus* at Cramer Gutter and Paulith Bank (Trueman, 1981); M24 *Cirsium dissectum* at Black Coppice; and M27 *Filipendula ulmaria* at Lower Netchwood. There is just one record of it in CG3 *Bromopsis erecta* at Stretton Westwood (Wrench, 1995) and in U1 *Rumex acetosella* on old pitmounds at Ketley (Trueman, 1981).

It is occasional in swamps such as S3 *Carex paniculata* at Fenemere (C. Walker, 1988); S7 *C. acutiformis* in the Old River Bed; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* in the Shrewsbury Canal at Wappenshall; S27 *Comarum palustre* at Berrington Pool (M.J. Wigginton, 1979); and OV26 *Epilobium hirsutum* at the Old River Bed.

Sometimes it persists in light shade as in damp W8 *Fraxinus excelsior*

woodland at Wynett Coppice. It is absent from the higher hill tops but is otherwise ubiquitous at the tetrad scale throughout the county.



### *Lathyrus grandiflorus* Smith

#### Two-flowered Everlasting-pea

Neophyte. Rare.

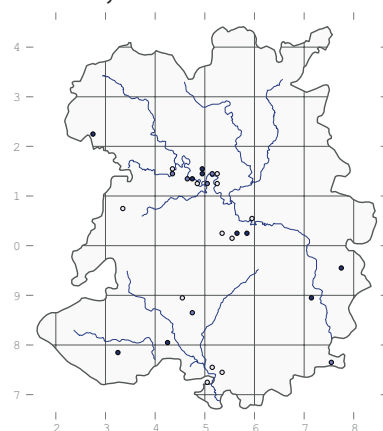
On waste ground at Oakengates (R.M. Stokes, 1994) and established on a roadside bank near Dorrington (R.J. Swindells, 2011) but barely naturalised.

### *Lathyrus sylvestris* L.

#### Narrow-leaved Everlasting-pea

Native. Rare. Decreasing. Axiphyte: woodland edges.

First records: Williams, c. 1800, 'on the right hand side of the road beyond Montford (old) Bridge. In a plantation by the side of the canal between Uffington and Shrewsbury.'



On woodland edges and river banks, where it is presumably native but becoming very rare. At the Old River Bed it grows in W6b *Salix x fragilis* woodland at the base of the slope of Mount Pleasant, where it has been known since 1909 (Hamilton). It has also been recorded in similar situations by the Severn in several places around Shrewsbury, as at Shelton Rough (D. Evans, 1805 – S. Turner, 1987), the Mount (Turner, 1963), Castlefields (J.A.

Roberts, 1975) and Preston Boats (Leighton, 1841) and downstream as far as Eaton Constantine (W.E. Beckwith, 1880). Elsewhere in the county it may often be a garden escape, as in garden hedges and the old railway line at Pant (E.D. Pugh, 1964 – J. Pedlow, 1998).

### *Lathyrus latifolius* L.

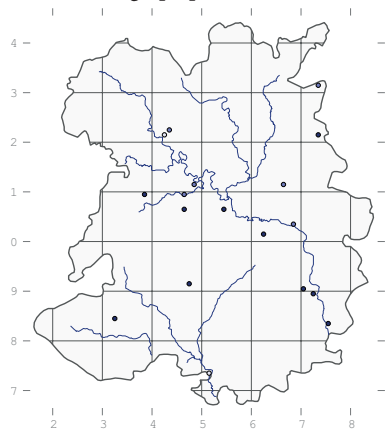
#### Broad-leaved Everlasting-pea

Neophyte. Scattered. Increasing. Gardens and waste ground.

First record: M. McGhie, 1841, 'in a field between Ludford and Ashford Bowdler.'

Leighton (1841, p. 353) did not accept Miss McGhie's record, suggesting that it may have been only a broad-leaved variety of *L. sylvestris*, but given the habitat it seems likely that she collected it as a garden escape.

Since then it has been recorded with increasing frequency, especially along railway lines at Baschurch (Beckwith, <1889 – Prestwood, 1982), Hook-a-gate (J.B. Johnson, 1939), Upper Forge (W.A. Thompson, 1980) and Wellington (Thompson, 1982). It is also found in places like Shrewsbury Cemetery (D.M. Evans, 1970), Highley-Alveley Country Park (1997), Venus Pool (D.L. Buckingham, 2000) and on a roadside verge at Stoney Stretton. It is quite persistent where it occurs, and it is often difficult to decide whether it is deliberately planted or not. The habitat is usually disturbed grassland, and it is typically found scrambling up hedges, fences or telegraph poles.



### *Lathyrus nissolia* L.

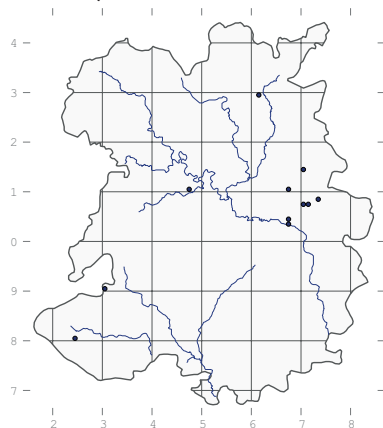
#### Grass Vetchling

Native. Scattered. Increasing. Roadside verges.

First record: Phillips, <1905, 'in the west of the county' (Record of Bare Facts 15, 1905).

The first recent records were in 1985 when John Box recorded it at Randlay and Storchley Grange. It is found on resown roadside verges and quarries. It

has been spreading north in Britain in recent years, but Shropshire is within its putative native range. Recent sites include a military base at Donnington (R.M. Stokes, 1994), a part of Llanfair Waterdine Turbary that was used for burying cattle during the foot & mouth disease outbreak in 2001 (F. Gomersall, 2004), an old quarry at Nobold (J. Ing, 2007) and a junction of the M54 at Ketley (B.J. Laney, 2008).



### *Lathyrus aphaca* L.

#### Yellow Vetchling

A casual on the pavement by the telephone kiosk in Pant (E.D. Pugh, 1963) and in grassland at Poles Coppice (SJ390045, D. Daniels, conf. Trueman, 1980).

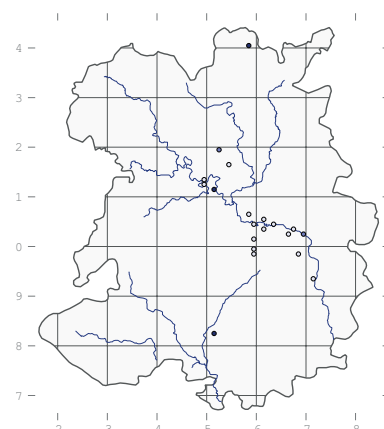
### *Ononis spinosa* L.

#### Spiny Restharrow

Native. Rare. Stable. Grassland.

First records (as *O. arvensis* var. *spinosa*): Williams, c. 1800, 'pastures between the New Inn and the Severn, Shrewsbury,' and 'between Aberly Wood and Shawbury heath.'

There is only one current site, at Mervley Farm, where it was found by E.F. McKay in 1994 and has been seen several times since. The old records are difficult to interpret, as it has not always been clearly differentiated from *O. repens* and the names have been ambiguous. Leighton (1841) considered *O. repens* to be common, but his description was clearly derived from a specimen of *O. spinosa* and he even commented (on p. 350) that his plant did not match the description of *O. repens*. Places where *O. spinosa* has definitely been recorded include Bridgnorth (R.M. Serjeantson, 1881, SHY), Coalport (where it was first seen by W.E. Beckwith in 1880 and last by M.H. Bigwood in 1953), Hadnall (Beckwith c. 1889 – G.E. Johnson, 1912), Lydehole Farm (M.B. Fuller, 1978-1986), by the Severn at Robertsford (W. Beacall, 1905 – H. Vickers, 1987) and Wenlock Edge (Beckwith, c. 1889 – W.H. Painter, 1905, SHY).



### *Ononis repens* L.

#### Common Restharrow

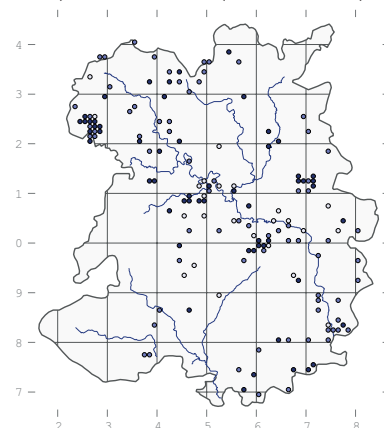
Native. Local. Stable. Axiophyte: grassland.

First record (as *O. arvensis*): Leighton, 1835, Shrewsbury (SHY).

A perennial of base-rich grassland, recorded in CG3 *Bromopsis erecta* at Lea Quarry; MG1e *Arrhenatherum elatius* at Windmill Hill; and MG5b *Cynosurus cristatus* at Bomere Pool and on Wenlock Edge.

It tends to grow on disturbed soils, possibly because they are more calcareous, and it is often found in quarries such as Cardeston (first recorded there by G.E. Johnson in 1911), Dolgoch (E.M. Rutter, 1955), Llyncllys (D.H. Wrench, 2004) and Wood Lane Gravel Pit. It used to grow at the disused Oswestry railway station (M. Wainwright, 1981) but it may have gone from there since the redevelopment, and it has been recorded along the Severn Valley Railway (W.A. Thompson, 1981).

It has often been found on the sandy heath at Wolf's Head (E.D. Pugh, 1981) and on the banks of rivers such as the Severn at Highley (J.B. Duncan, 1909). A good place to look for it is along Blakeway Hollow. Lowland: up to about 220 m at the Novers (N. Button, 2006) and Smethcott (Wrench, 1994).

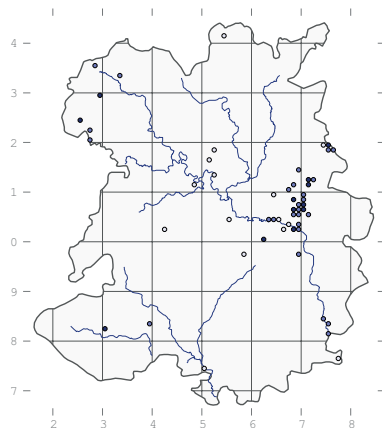


## *Melilotus altissimus* Thuill.

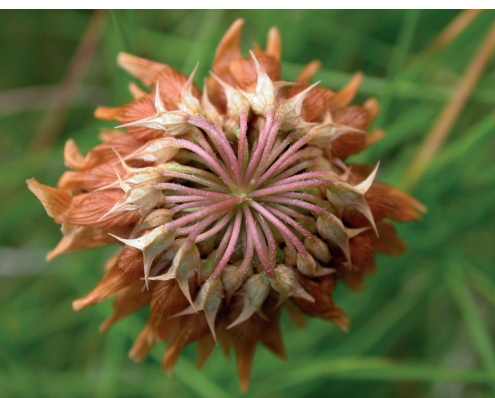
### Tall Melilot

Archaeophyte. Scattered. Decreasing. Road verges, railways, waste ground.

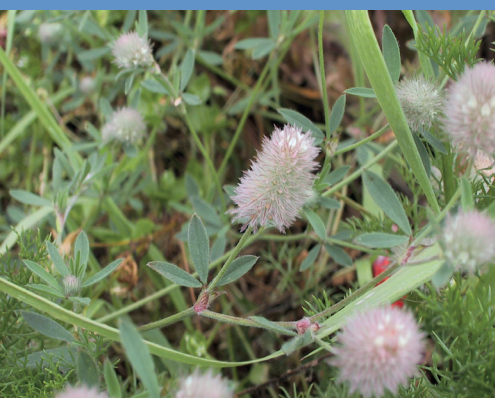
First records: Williams, c. 1800, 'about Battlefield and Cound'.



On waste ground and by transport corridors including roads, railways and rivers, usually on rather calcareous soils. In Much Wenlock it grows in MG5 *Festuca rubra* grassland on a road verge by Windmill Hill. There are also recent records of it on old industrial waste ground at Granville Country Park (A.K. Thorne, 2000), where it was first recorded by T. McLean in the early 1980s, in a car park at Oswestry (R.A. Dawes, 2007) and at the Tanat Light Railway at Nantmawr (S. Swindells,



*Trifolium repens* (Dan Wrench)



*Trifolium arvense*

2009). It appears to be less common than in the 1970s and '80s, and it behaves as a casual here, on the edge of its range. In the past it was sometimes recorded as a weed in arable fields, as at Presthope (W.B. Allen, 1909), or in gardens ('single plant in Churton Cottage Garden, 1903' (R.D. Benson)).

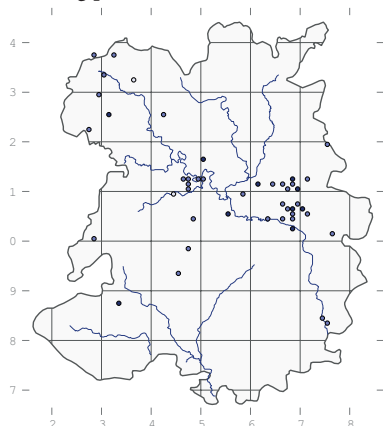
## *Melilotus albus* Medikus

### White Melilot

Neophyte. Scarce. Stable. Waste ground.

First record: T.P. Blunt, 1898, by the Rea Brook at Hanwood.

A casual (annual or biennial) of waste ground by roads, railways and rivers, with populations that tend to be rather short-lived. It is most frequent in the Telford area, where it was first recorded at Buildwas by W.B. Allen in 1907. It sometimes occurs in gardens (e.g. at Beckbury, O. Hunter, 1977) where it may have come from bird seed, but more commonly it seems to move along transport corridors such as by the A5 at Oswestry in 1997 and a roadside in Trench in 2004. B.R. Fowler found it to be abundant in Gonsal (sand) Quarry in 1980, and it has been recorded in a brick pit at New Hadley (W.A. Thompson, 1982) and the sand quarry at Venus Bank (D. Wood, 1986). The other main habitat for it was along railways such as at Ketley Station (Thompson, 1982), Oswestry Station (E.D. Pugh, 1979) and by the Severn Valley Railway near Highley (Thompson, 1979). A reliable place to see it in recent years has been on former industrial land at Harlescott, where it grows on roadsides and in building plots.



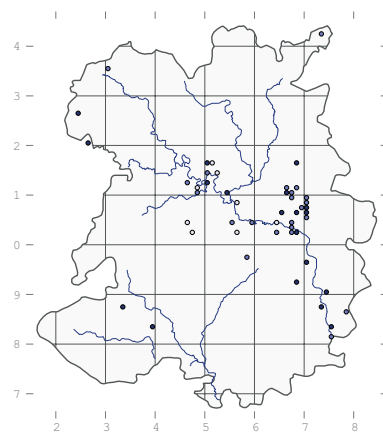
## *Melilotus officinalis* (L.) Lam.

### Ribbed Melilot

Neophyte. Scattered. Increasing. Waste ground.

First record: J.W. Calcott, 1873, Buildwas Station (SHY).

A biennial plant of waste ground on roadsides, building plots, spoil heaps and railway lines. It was occasionally grown in fields as a green manure or as fodder, as in clover fields at Dorrington (W.E. Beckwith, ca. 1889) and in meadow by Rea Brook at Meole Brace (N.M. Mackenzie, 1972) but not recently. In Sinkers Flora it was considered to be largely restricted to urban sites in Shrewsbury and Telford, but since then it has been recorded more widely, usually as small numbers of plants on roadsides and waste ground. There are few places where it has been recorded more than once, so it is only ever a casual in this county. The best place to look for it is along road verges in Telford; in Shrewsbury it grows in a disused works depot adjacent to the railway line at Underdale.



## *Melilotus indicus* (L.) All.

### Small Melilot

Just three records: Melvill recorded it as a weed in his garden at Meole Hall in 1919 (*Record of Bare Facts* 29, 1920), H.M. Bigwood found it at Rindleford in 1957 (*Transactions* 1966), and D. Stoves saw it at Monkhoppton in 1972 (*Transactions* 1973). It seems to be at best a casual.

## *Medicago lupulina* L.

### Black Medick

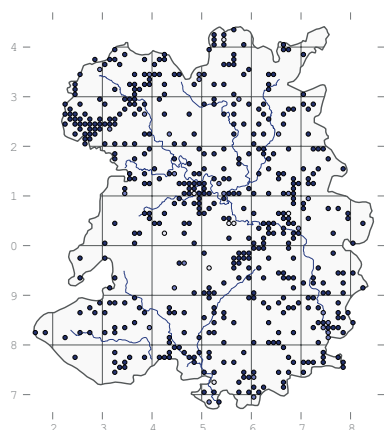
Native. Widespread. Stable. Grassland, waste ground, canals, railways.

First record: Williams, c. 1800, 'pastures and walls, common.'

An annual of grassland on calcareous or sandy soils, and of roadsides, spoil



heaps and disturbed ground. It is frequent in CG2 *Avenula pubescens* in abandoned limestone quarries such as Craig Sychtyn and Dolgoch, and in CG3 *Bromopsis erecta* at Hilltop Meadow, Ippikin's Rock, and Stretton Westwood (D.H. Wrench, 1995). It is sometimes found in MG5b *Galium verum* grassland, as at Hilltop, Bomere Pool and in a pasture near Treflach (Trueman, 1981). At Prees Heath it grows in sandy U1 *Rumex acetosella* grassland. Trueman (1981) recorded it in OV19 *Tripleurospermum inodorum* vegetation on a road verge at Tong, which is a typical situation for it. Although it is widespread in the lowlands it is rare above about 250 m and entirely absent from the higher hills. Canal towpaths are a good place to look for it, especially along the Montgomery Canal.

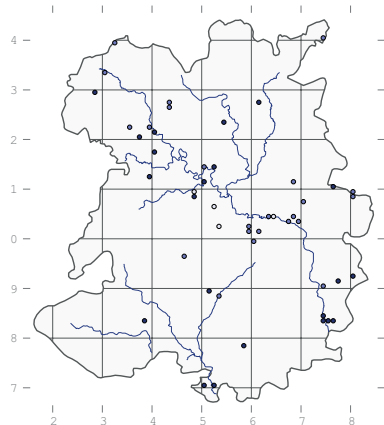


### *Medicago sativa* L.

#### Lucerne

Neophyte. Scattered. Stable. Arable fields and roadsides.

First record: Leighton, 1841, 'cornfields at Pulley, sparingly.'



Formerly a plant of cultivated fields where it was grown as a green manure, but now mostly found on roadsides as a casual and sometimes in seed mixes in conservation sites. There are recent records for the Severn Valley Railway at Highley, the A5 at Wolf's Head and

Felton Butler (both B.J. Laney, 2008), at Highley-Alveley Country Park (J. Handley, 2009), in a field margin at Burlington, on the Hodnet bypass, at Glebe Farm, Hopesay (J. Clayfield, 2010) and on a road verge at Pool Hall, Alveley. *Medicago sativa* ssp. *falcata* (L.) Arcang., Sickle Medick, occurred on the verge of the Hodnet bypass in 2009, where it was probably introduced in a seed mix.

### *Medicago arabica* (L.) Huds.

#### Spotted Medick

Native. Rare. Casual. Gardens.

First record: Beckwith, 1880, 'about Eyton Rock.'

Known at Meole Brace in the early 1970s (D.M. Evans & M.J. Connell) and on an old allotment site at Madeley (G. Evans & N. Randall, 2004).

### *Trifolium repens* L.

#### White Clover

Native. Widespread. Stable. Grassland, bare ground and mires.

First record: Williams, c. 1800, 'pastures, common.'

Almost ubiquitous in grassland, having been recorded in CG2 *Avenula pubescens* at Moelydd, Windmill Hill and elsewhere; CG3 *Bromopsis erecta* at Moelydd, Hilltop (D.H. Wrench, 1994) and Stretton Westwood (Wrench, 1995); CG7 *Thymus polytrichus* in Nantmawr Quarry; CG10 *Helianthemum nummularia* at Llyncllys Hill and Minton Batch (R. Tapper, 1983); MG1 *Arrhenatherum elatius* on roadsides and railway embankments throughout; MG5 *Festuca rubra* everywhere; MG6 *Cynosurus cristatus* at Melverley Farm, Ruewood and elsewhere; MG7 *Lolium perenne* at Rudge (Trueman, 1981); MG8 *Caltha palustris* at Crose Mere, Melverley Farm and elsewhere; MG10 *Holcus lanatus* at Brown Moss, Fenemere, etc.; U1 *Rumex acetosella* on Abbet's Castle Hill (Trueman, 2005), Prees Heath and Titterstone Clee (Trueman, 1981); and U4 *Agrostis capillaris* at Brown Clee, Rhos Fiddle and Shelve (Trueman, 1981).

In agricultural swards it is often planted, and it is an early coloniser of bare ground. Here it is recorded in OV10 *Senecio vulgaris* on a roadside at Shifnal (Trueman, 1981), OV14 *Urtica urens* at Rudge Heath, OV19 *Tripleurospermum inodorum* at Tong, OV21 *Plantago major* in a garden at Pant and OV22 *Taraxacum officinale* in a sand quarry at Buildwas (all

Trueman, 1981-2). It is very common in OV23 *Dactylis glomerata* on roadsides everywhere, and it has been found in OV30 *Bidens tripartita* community on the edge of Marton Pool, Chirbury (M.J. Wigginton, 1979), OV31 *Rorippa palustris* at Brown Moss, OV32 *Ranunculus sceleratus* at Crose Mere, and even in the mesotrophic OV35 *Lythrum portula* vegetation on the edge of Pool 6 at Brown Moss. At Snailbeach, Trueman (1981) found it to be a component of OV37 *Festuca ovina* vegetation on lead mine waste.

The other main habitat for it is wetland, where it is found in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983), M22 *Juncus subnodulosus* at Sweeny Fen and elsewhere, M23 *Juncus effusus* on the Long Mynd (C.M. Owen, 1983) and Fenemere, and M35 *Montia fontana* at Boiling Well (Trueman, 1980), Wild Moor (Tapper, 1983) and other places on the Long Mynd.



### *Trifolium hybridum* L.

#### Alsike Clover

Neophyte. Widespread. Stable. Grassland, waste ground.

First record: T. Butler, <1886, Cound, Harnage & Cressage (SHY).

Grown in the past for fodder and now sometimes included in seed mixes used for lawns and leys. It is often found on road verges, canal towpaths, restored quarries etc. At Whixall Moss it occurs in the car park by the canal. There is no clear change in its abundance or range, although it is better recorded in the west of the county than previously.

### *Trifolium fragiferum* L.

#### Strawberry Clover

On the verge of the Shrewsbury bypass near Sundorne (J.L. Mason, 2004, BIRM), where it was probably introduced with a seed mix. Previously recorded only by Williams, c. 1800, on the side of the road at Harley Bank and Muckley Cross.

## *Trifolium aureum* Pollich

### Large Trefoil

Formerly a rare casual introduced as an agricultural weed. There are records for Montford (as *T. agrarium*, Miss Lloyd, 1864), Welsh Frankton (O.M. Feilden, 1880, SHY), Oswestry (T.P. Diamond, 1891), roadsides at Pulverbatch (R.D. Benson, 1899) and Welshampton (Feilden, 1909).

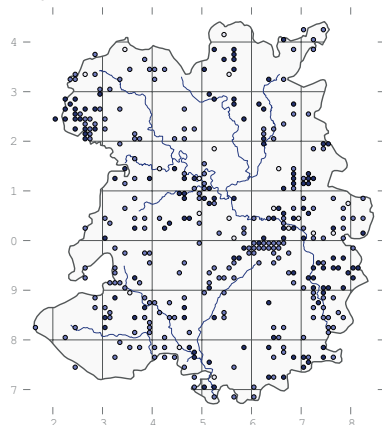
## *Trifolium campestre* Schreber

### Hop Trefoil

Native. Widespread. Decreasing.  
Axiophyte: dry grassland.

First record (as *T. procumbens*): Williams, c. 1800, 'pastures in a gravelly soil, common.'

On dry, sandy soils in habitats such as U1 *Rumex acetosella* grassland on Abbott's Castle Hill (Trueman, 2005) and OV23 *Dactylis glomerata* on a road verge at Newport (Trueman, 1981). It is often found on disturbed or reseeded soils in places such as Lea Quarry on Wenlock Edge or the Hodnet Bypass, where it was abundant on newly sown verges in 2009.



## *Trifolium dubium* Sibth.

### Lesser Trefoil

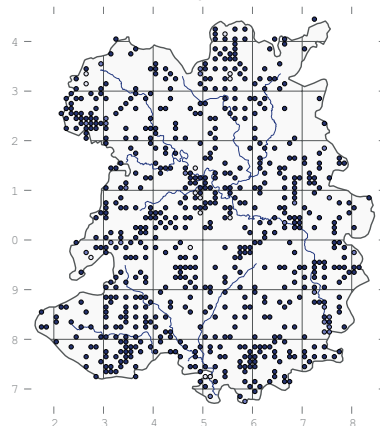
Native. Widespread. Stable. Grassland and waste ground.

First record (as *T. filiforme* var.  $\beta$  (*procumbens* Curtis)): Williams, c. 1800, 'pastures and heaths, common.'

In a wide range of grassland, often in rather bare or trampled areas such as the middle of grassy tracks or the edges of pools and wet hollows. Annual or short-lived perennial. It is occasionally recorded in calcareous swards such as CG2 *Avenula pubescens* at Craig Sychtyn; CG3 *Bromopsis erecta* at Stokes's Barn (Trueman, 1981); MG5 *Festuca rubra* (all subcommunities), including at Stocking Meadows (Trueman, 1981) and Cole Mere; MG6b *Cynosurus cristatus* grassland at

Melverley Farm and Earlsdale; MG7e *Plantago lanceolata* grassland at Rudge (Trueman, 1981); and MG8 *Caltha palustris* grassland at Molverley Farm.

Although these are mostly wet habitats, it is also found in U1 *Rumex acetosella* grassland at Abbott's Castle Hill (Trueman, 2005), Attingham Park, Prees Heath and elsewhere; and in U4 *Agrostis capillaris* at Shelve (Trueman, 1981). There are also records of it in ruderal vegetation such as OV10 *Senecio vulgaris* waste ground at Shifnal; OV22 *Taraxacum officinale* sand heaps at Buildwas Quarry; and OV23 *Dactylis glomerata* road verges at Cosford (all Trueman, 1981-2). It is not limited by altitude, growing in the quarries on the summit of Titterstone Clee, but it is largely absent from the moorland on the higher hills.

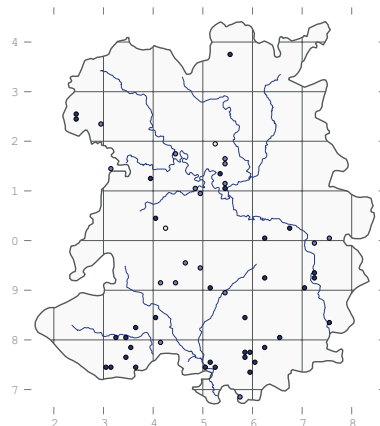


## *Trifolium micranthum* Viv.

### Slender Trefoil

Native. Scattered. Increasing.  
Grassland.

First record (as *T. filiforme*): Williams, c. 1800, 'pastures and heaths, common.'



Occasional in lawns and short, usually rather thin grassland and rock outcrops. Easily overlooked or mistaken for *T. dubium*, and often growing in the same vicinity. It is recorded in CG10 *Helianthemum nummularia* in Minton Batch (R. Tapper, 1983) and U1 *Rumex acetosella* grassland on Titterstone Clee

(Trueman, 1981) and Prees Heath. It seems just as common on basic as on acid soils, being recorded in places like Moelydd (A.O. Chater, 2002) and Windmill Hill.

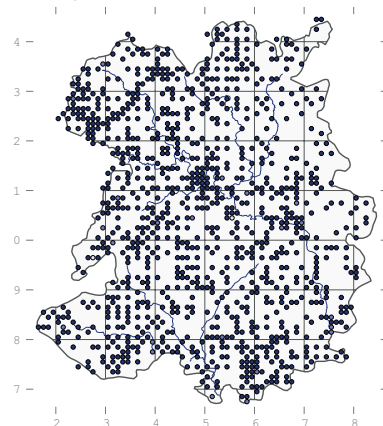
## *Trifolium pratense* L.

### Red Clover

Native. Widespread. Stable. Grassland.

First records: Williams, c. 1800, 'a variety with white flowers... at Berrington Pool and in a clover-field adjoining Cound church-yard.'

Frequent in a wide variety of grassland types, sometimes clearly sown but often native. It is recorded in CG2 *Avenula pubescens* at Craig Sychtyn, Dolgach, Llanymynech Rocks and the Novers (Trueman, 1981) and CG3 *Bromopsis erecta* at Stokes's Barn (Trueman, 1981), Hilltop and Stretton Westwood (D.H. Wrench, 1995). It is often but by no means always present in MG1 *Arrhenatherum elatius* on roadsides and railway embankments in places like Lanegreen and the old Severn Valley Railway at Sutton, but it is ubiquitous in MG4 *Sanguisorba officinalis* and MG5 *Festuca rubra* grasslands. It tends to be in the more species-rich MG6 *Cynosurus cristatus* meadows, as at Molverley Farm and Earlsdale, and it is much rarer in MG7 *Lolium perenne* grassland, where it is usually replaced by *T. repens*. However, it is frequent in wet meadows of MG8 *Caltha palustris* and M22 *Juncus subnodulosus* in places like Crose Mere, Morton Pool and Sweeny Fen. Trueman (1981) found it in OV23 *Dactylis glomerata* on a road verge at Uppington and in OV25 *Cirsium arvense* in a field margin at Norton, Stockton, while M.J. Wigginton (1979) recorded it in OV30 *Bidens tripartita* community on the margins of Marton Pool, Chirbury. Plants sown in arable fields and leys are the more robust *T. pratense* var. *sativum* Schreber, which was first recorded in the county by Butler (<1886, SHY) in fields between Harnage and Cound.

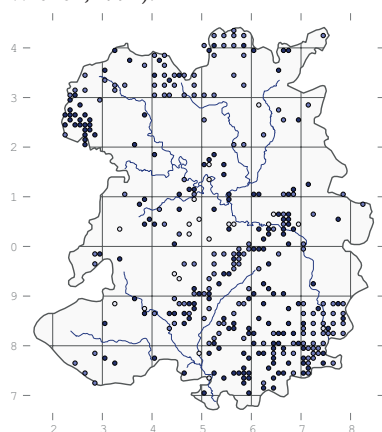


***Trifolium medium* L.****Zigzag Clover**

Native. Local. Stable. Grassland and woodland edge.

First record: Williams, c. 1800, 'woods, thickets and pastures and ditch-banks in a clay soil.'

A perennial of open grassland on road verges, in quarries and embankments, in marshy grassland and along woodland edges. It occurs in CG2 *Avenula pubescens* in an old quarry at Craig Sychtyn, and it is recorded in MG5 *Festuca rubra* on Llyncllys Hill, Cole Mere and Rushbury (D.H. Wrench, 1994) and MG8 *Caltha palustris* at Molverley Farm. At Sweeny Fen it occurs in M22 *Juncus subnodulosus* and at Molverley Farm in M23 *Juncus effusus*. At Wynett Coppice it grows in cleared and replanted W8 *Fraxinus excelsior* woodland. It seems to show a distinct preference for base-rich soils, being absent from the moorland on the higher hills, although it is recorded up to about 420 m at Horseditch on Titterstone Cleve (D.H. Wrench, 1994).

***Trifolium incarnatum* L.****Crimson Clover**

Neophyte. Rare. Casual. Roadsides.

First record: W. Whitwell, 1864, 'Woodhill, near Oswestry.'

One plant on the newly-sown verge of the A5 at Burcotgate (J. Martin, 1990) and two plants in a sown grassland at Bridgnorth (R.M. Stokes, 2003). There are previous records of it at Frodesley (R.M. Serjeantson, 1879, SHY), in a clover field at Pulverbatch (R.D. Benson, 1891, SHYB), Sutton and Calcott (both Hamilton, 1909) and Boreton (N.M. Mackenzie, 1954).

***Trifolium striatum* L.****Knotted Clover**

Native. Local. Stable. Axioophyte: grassland.

First records: Williams, c. 1800, 'sides of roads and gravelly pastures about Eaton Mascot, Berrington, Edgmond, Cound, on the Wrekin, Hagmon Hill, etc.'

In grassland on thin, dry soils, usually on the hills but formerly more widespread in the lowlands. It is recorded in U1 *Rumex acetosella* grassland on Abbot's Castle Hill (Trueman, 2005) and Prees Heath and in OV22 *Taraxacum officinale* at Viroconium.

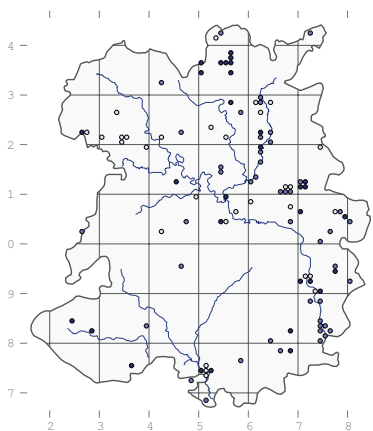
***Trifolium scabrum* L.****Rough Clover**

Just three records: 'in ye lane leading from Bishops Castle to Hucklemont' (L. Brown, 1726), Frankton (O.M. Feilden, 1920) and in the sand quarry at Coundarbour (E.M. Rutter, 1957, SHY). Diamond (1891) also listed it for Crose Mere but that record is not generally accepted. It is native in coastal grassland, but not in Shropshire.

***Trifolium arvense* L.****Hare's-foot Clover**

Native. Local. Stable. Sandy grassland.

First record: A. Aikin, 1796, 'on Knockin heath... among the driest and deepest sand were many gigantic plants of *Trifolium arvense*.'



On sandy, dry soils, generally along the river valleys in the north of the county, but also on old heaths that have not been too agriculturally improved. At Prees Heath it grows in U1 *Rumex acetosella* grassland, which must be its most typical habitat. It is also recorded on railways such as Hodnet Railway Station (R.B. Lees, 1978), the Llanymynech line (Hamilton, 1909), Newdale (W.A. Thompson, 1982), in several places on the Severn Valley

Railway (Thompson, 1981), and an old yard at Woofferton (M.M. Webster, 1975). Sometimes it is found on old walls, as near Ludlow (T. Salwey, 1841) and Ludford (A.W. Weyman, 1909) (although both of these might have been outside v.c. 40). The best place to look for it is at Prees Heath, although it has also been recorded recently in arable fields at Attingham (J. Ing, 2007) and it is quite common at Granville Country Park (A.K. Thorne, 2000).

***Lupinus arboreus* Sims****Tree Lupin**

Established at Dorrington Sand Quarry since 1979 (Sinker), where it occurs in OV23 *Dactylis glomerata* (Trueman, 1981).

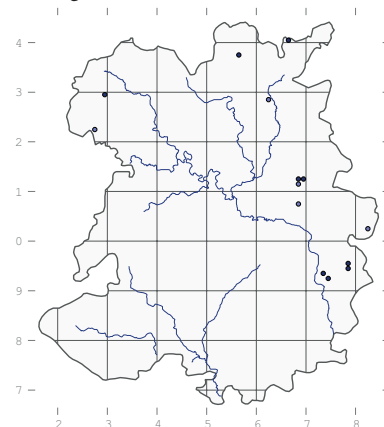
***Lupinus* × *regalis* Bergmans  
(*arboreus* × *polyphyllus*)****Russell Lupin**

Neophyte. Scattered. Increasing. Gardens, roadsides and waste ground.

First record (as *L. polyphyllus*): B.R. Fowler, 1976, 'roadside verge at Boningale.'

This is the common garden lupin, widely cultivated and sometimes found established on roadsides etc., usually near houses and rarely persisting.

We have reassigned the records of *L. polyphyllus* in Sinker (1985) to this hybrid, although taxonomically it is probably an oversimplification to assume that all the cultivars are derivatives of just these two species. One of the most persistent populations was at Oswestry Railway Station before it was redeveloped, and there were plants there from at least 1983 (E.D. Pugh) until 1994 (F. Griffith). The habitat is usually disturbed ground, and Trueman (1981) recorded it in OV21 *Plantago major* in a garden in Pant. It is often ignored as an obvious introduction. A good place to find it is on the verge of A442 at Trench, where it has grown since 1988 (Trueman).





## *Laburnum anagyroides*

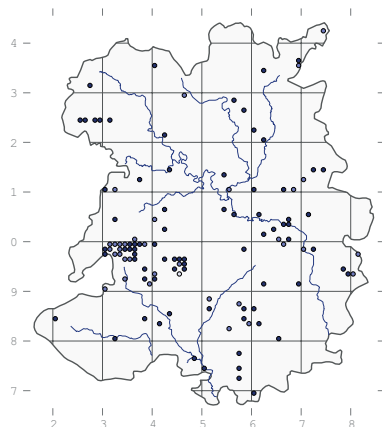
Medik.

### Laburnum

Neophyte. Widespread. Increasing. Hedges, gardens and waste ground.

First records: 1909: Pennerley (Hamilton) and Church Stretton (E.S. Cobbold).

Traditionally planted in hedges on the hills, particularly on the Stiperstones, Long Mynd and Brown Clee. More recently it has become widespread in hedges in towns and villages and sometimes it is self-sown on waste ground, in quarries, etc. It is said that garden plants are more likely to be Hybrid Laburnum, *Laburnum* × *watereri* (Wettst.) Dippel (*alpinum* × *anagyroides*) although there is just one record, by D.H. Wrench at Worsley in 2007 (conf. Whild, BIRM).



## *Laburnum alpinum* (Mill.) J.

Presl

### Scottish Laburnum

In several places on the Stiperstones, such as 'a huge old tree at Blakemoorflat, SJ37450075' and 'in an enclosure at Rigmoroak, SJ362992' (both W.I.J. & A.K. Thorne, 2002, conf. P.S. Green, BIRM).

## *Cytisus scoparius* (L.) Link

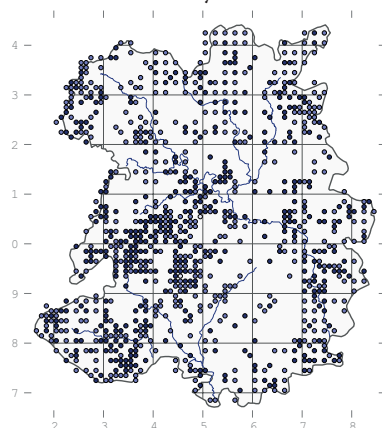
### Broom

Native. Widespread. Stable. Heathland, acid grassland, scrub.

First record (as *Spartium scoparium*): Williams, c. 1800, 'banks and hills, common.'

Occasional on dry, often disturbed or sandy soils, in quarries and roadsides, and in scrub. At Prees Heath it occurs in U1 *Rumex acetosella* grassland and in the H8 *Ulex gallii* that develops on the more stable substrate. It is also recorded in U1 on Earl's Hill. At Oaks Wood it is a component of the W16 *Quercus petraea* although it is likely to be found on rock outcrops or in clearings. At Old Oswestry

it is sometimes abundant in W23 *Ulex europaeus* scrub, where it is heavily parasitized by *Orobancha rapum-genistae* and it sometimes dies off altogether. It is often recorded as colonizing old quarries such as Dorrington Sand Quarry, where it grows in OV23 *Dactylis glomerata* (Trueman, 1981), and a quarry at The Ercall, where it colonises new MG5 *Festuca rubra* grassland on poorly-drained substrates, and the flowers include bright red as well as the normal yellow form. It is not restricted by altitude in the county.

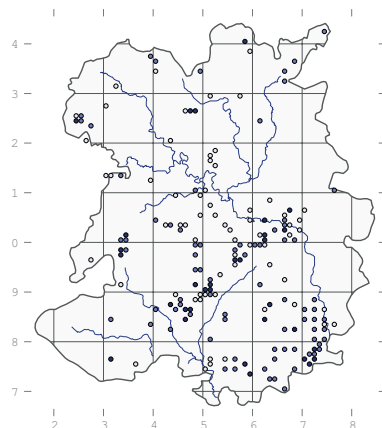


## *Genista tinctoria* L.

### Dyer's Greenweed

Native. Local. Decreasing. Axiophyte: grassland.

First record: Williams, c. 1800, 'pastures and ditch banks, not uncommon.'



A plant of old meadows, typically CG2 *Avenula pubescens* in place like Jones's Rough or Windmill Hill, CG3 *Bromopsis erecta* at Hilltop, or MG5 *Festuca rubra* at Bell Coppice, Hilltop and Nantmawr (Trueman, 1981). Sometimes it persists in W8 *Fraxinus excelsior* woodland, as in the quarry on Gleedon Hill (2004), where it was first recorded in open grassland by E.M. Rutter & R.D. Meikle in 1954. One of the best sites for it is at Sleaf Airfield, where it occurs in MG1 *Arrhenatherum elatius* grassland along the side of the track from Brandwood

(possibly in the same place that W. Watkins recorded it in Leighton's Flora). It is a lowland calcicole with a south-easterly range in Britain.

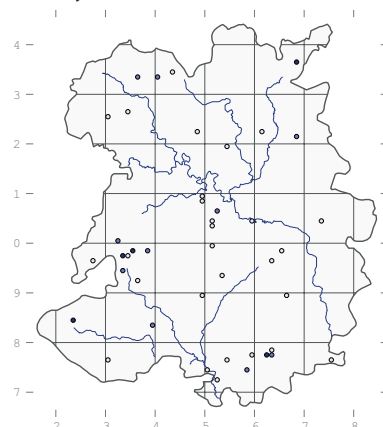
The map shows that this is one of the most dramatically declining plants in the county. It was never so common that people did not make records of it, so we have relatively good historical information.

## *Genista anglica* L.

### Petty Whin

Native. Scarce. Declining. Axiophyte: bogs, heaths and damp grassland.

First record: J.J. Dillenius & S. Brewer, 1726, Norbury.



Generally an upland plant of wet heaths, but also formerly present on lowland mires in the north of the county. In 2001 A.P. Bell reported that it was still present on an undrained fragment of Betton Moss, but that site has been almost completely destroyed now. Until recently it was at Snipe Bog (P. Parker, 1980), which is probably the same site as that reported by Williams in c. 1800 ('in a pasture adjoining the west side of Berrington') and Beckwith in 1880 ('boggy field near Berrington'), at Caynton (H. Bidwell, 1841 – R.B. Lees, 1977), and in a pasture opposite Ellesmere College, where it was found by E.A. Wilson in 1951 (this may be the same as that described by O.M. Feilden in 1909) and where it was still present until 1983, but the site was planted up with trees in 1985. It was once quite widespread in the lowlands, but most sites were lost in the 19<sup>th</sup> century or before.

The upland populations have fared somewhat better. It was discovered at Shelve Pool by Perring in 1975 and a nearby population turned up on the side of a track near The Bog in 1977 (J. Warren). Both are still present (A.K. Thorne, 2005 and M. Race, 2010 respectively). At Catherton Common E. Heywood-Waddington found it in 1977

and it was still present in 2005 (J. & D. Bingham). A new site was found in 2010 in heathland on the hillside below Caer-din Ring (SO237844, F. Gomersall). It grows throughout Britain wherever suitably peaty soils are found, so it is not climatically restricted in the county, but drainage and agricultural improvement has led to the severe decline here and elsewhere in the Midlands. It is evidently tolerant of light grazing, but it can be eliminated by the very high levels of sheep grazing found on some of the hills.

### *Genista hispanica* L.

#### Spanish Gorse

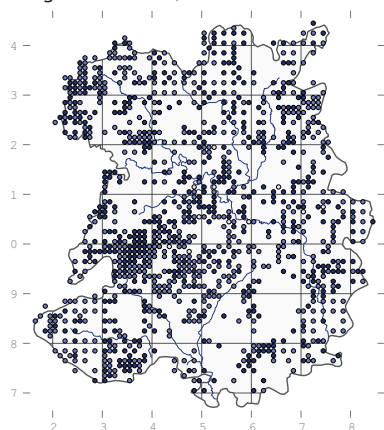
On waste ground at Oakengates (R.M. Stokes, 1994) and planted by a new road in the Rea Brook Valley, Shrewsbury (J. Ing, conf. Whild, 2006).

### *Ulex europaeus* L.

#### Gorse

Native. Widespread. Stable. Acid grassland, scrub, heaths.

First record: Williams, c. 1800, 'banks, hedges and woods, common.'



Common and often locally abundant on the more acid soils, especially in areas of neglected pasture and woodland edges. It is a vigorous invader in U1 *Rumex acetosella* grassland in places like Abbot's Castle Hill (Trueman, 2005), Earl's Hill, Prees Heath, and all over the Long Mynd, where any relaxation of the management regime causes it to spread vigorously. It is also recorded in an MG5 *Festuca rubra* meadow at Crickheath Hill (Trueman, 1979) and in OV23 *Dactylis glomerata* on a road verge at Uppington (Trueman, 1981). In Oaks Wood it is a component of open W16 *Quercus petraea* woodland, although it cannot tolerate much shade. Wherever it becomes abundant, it forms the typical W23 *Ulex europaeus* scrub, which is an impenetrable and species-poor

community that succeeds slowly to W10 *Quercus robur* (or sometimes W8 *F. excelsior*) woodland.

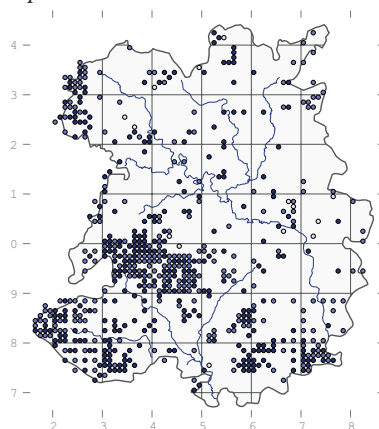
### *Ulex gallii* Planchon

#### Western Gorse

Native. Local. Stable. Heaths, grassland and scrub.

First record: T.W. Wilson, 1836, 'near Lee bridge.'

Frequent on the hills at middle altitudes, characteristically in H8 *U. gallii* heath in places like Carding Mill Valley (Trueman, 1981), Cramer Gutter and the Stiperstones. It is less widespread than *U. europaeus* and not as abundant, but it often occurs in similar places at lower altitudes and it sometimes replaces it on the more acid soils. There are also records of it in CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981); MG5 *Festuca rubra* in Townbrook Hollow; M15 *Trichophorum cespitosum* at Cramer Gutter; U1 *Rumex acetosella* on Stapeley Hill; and U4 *Agrostis capillaris* at Rhos Fiddle.



## Polygalaceae

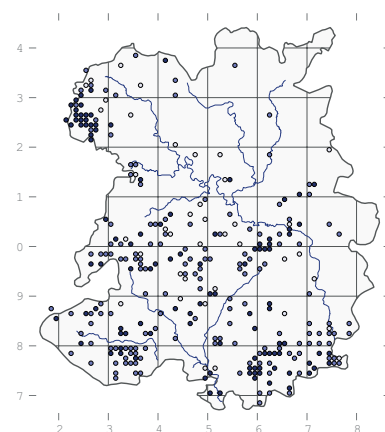
### *Polygala vulgaris* L.

#### Common Milkwort

Native. Local. Stable. Quarries and pastures.

First record: Williams, c. 1800, 'pastures, not uncommon.'

In neutral to calcareous short grassland, typically on rather thin soils such as old quarry waste or sloping grazed fields. It is recorded in CG2 *Avenula pubescens* at the Novers, Pattens Rock Quarry, Llanymynech Rocks (all Trueman, 1981), Blackbridge Quarry, Craig Sychtyn and Dolgoch Quarry. It is also found in MG5 *Festuca rubra* grassland at Nantmawr and Wagbeach (both Trueman, 1981) and specifically in MG5c *Danthonia decumbens* grassland in grazed pasture on Crickheath Hill (Trueman, 1979) and on Llyncllys Hill.



### *Polygala serpyllifolia* Hose

#### Heath Milkwort

Native. Local. Stable. Axiophyte: heaths and acid grassland.

First record: J.J. Dillenius & S. Brewer, 1726, 'in a boggy meadow beyond Norbury.'

Occasional in wet heaths such as the M15 *Trichophorum germanicum* at Cramer Gutter and in acid grassland such as U1 *Rumex acetosella* on Titterstone Clee (Trueman, 1981) and U5 *Nardus stricta* at Rhos Fiddle and Titterstone Clee (Trueman, 1981). On the drier margins of lowland bogs such as Wem Moss and, in the past, at Brown Moss (Sinker, 1962). It is not restricted by altitude in this county, occurring around pools on the summit of Brown Clee (at 507 m, SO59678668, 2004). Although it has decreased in the lowlands and the upland fringes, the populations on the hills are still thriving.



*Ulex europaeus* on Haughmond Hill



*Prunus cerasifera* fruits at Tong Norton

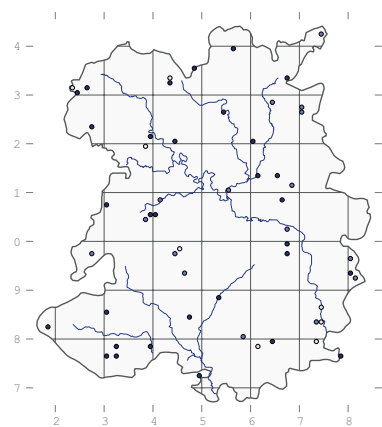
## Rosaceae

*Spiraea salicifolia* agg. L.

## Bridewort

Neophyte. Scattered. Stable. Gardens, waste ground.

A widespread garden plant, occasionally forming large stands on roadside verges where it has either been deliberately planted or established from garden throw-outs. In 1910 G.E. Johnson and O.M. Feilden described it as growing 'quite naturalised' on the bank of the Llangollen Canal at Whixall Moss, but in 1918 G.R. Jebb claimed to have originally planted it there (*Record of Bare Facts* 28, 1919). It was still there in 1994 (P. Parker), but only in small quantities. Another good site for it is Oswestry Racecourse, where it has been known since Leighton's time. Although stands can increase slowly, it shows no signs of spreading into the wild. Most plants are probably *S. × pseudosalicifolia*, but expert confirmation is needed to be confident.

*Spiraea × pseudosalicifolia*Silverside (*salicifolia* × *douglasii*)

## Confused Bridewort

Neophyte. Rare. Stable. Roadsides and railways.

First record (as *S. salicifolia*): Leighton, 1839, 'a single bush on the bank of the turnpike road at the Pissing-bank near Nesscliffe' (det. A. Forrest & D.R. McKean, E, PTH, SHY, SLBI).

Probably the commonest taxon of Bridewort grown in gardens and naturalised in the wild. Specimens of Leighton's 'single plant' have been determined as both *× pseudosalicifolia* and *× billardii* Herincq (*alba* × *douglasii*), demonstrating how difficult the group is. Subsequent records include Ketley Pitmounds (P.S. Gateley, 2003), along lanes in Pennerley (Whild, det. Silverside, 2007, BIRM), and on a railway bank at Weston, Stowe (P.R. Green, 2010).

*Spiraea alba* Duroi

## Pale Bridewort

Neophyte. Gardens.

A specimen collected by Perring at Attingham Park in 1974 is at LTR.

*Spiraea × arguta* Zabel(*multiflora* × *thunbergii*)

## Bridal-spray

Neophyte. Gardens.

Recorded by Perring as 'frequent in the woodlands' at Attingham Park in 1969.

*Kerria japonica* (L.) DC.

## Kerria

Neophyte. Local. Gardens.

Planted in woodland at Clunton Coppice (1998) and on Ketley Pitmounds (P.S. Gateley, 2003).

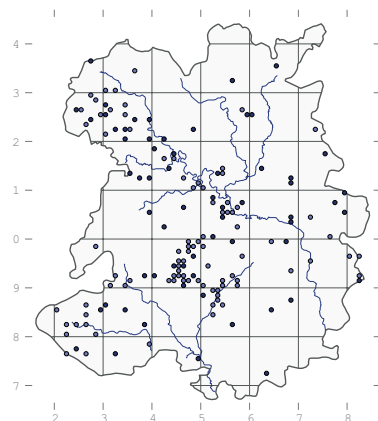
*Prunus cerasifera* Ehrh.

## Cherry Plum

Neophyte. Local. Stable. Roadside hedges.

First record: D.M. Evans, 1971, 'in a spinney, Belle Vue.'

Increasingly planted in roadside hedges, often as part of the landscaping during construction of bypasses and road widening schemes, but sometimes along remote country lanes such as one opposite North Mytton House, or along the verge of the lane outside Weston Park at Tong Norton. Self-sown shrubs appear to be rare. *Prunus cerasifera* var. *pissardii* (Carrière) L.H. Bailey was recorded at Ketley Pitmounds by P.S. Gateley in 2003.

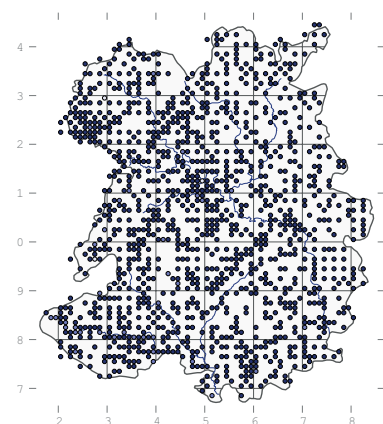
*Prunus spinosa* L.

## Blackthorn

Native. Widespread. Stable. Hedges and scrub.

First record: J.J. Dillenius, 1724, 'between Oswestry and Salop.'

A common shrub in hedges, where it is often planted, and in patches of scrub in field corners and neglected grassland. It is too widespread for the map to show any change, but it has probably increased in abundance in recent decades as scrub cover has spread on uncultivated land. The most characteristic habitat is W22 *P. spinosa* scrub, which is easily recognised in the field but difficult to record phytosociologically as it is often too species poor to allow it to be properly categorised. It is recorded as a colonist in CG2 *Avenula pubescens* at Jones's Rough and CG3 *Bromopsis erecta* in Lea Quarry. On roadsides there are usually some suckers or saplings in MG1 *Arrhenatherum elatius*, and it is often recorded in MG5 *Festuca rubra* in meadows such as at Hayton's Bent (D.H. Wrench, 1995) or roadsides such as at Guilden Down. At Sweeny Fen it is found in M22 *Juncus subnodulosus*. There is often some blackthorn in the understorey of woods, including W5 *Alnus glutinosa* at Brownheath Moss; W6 *Salix × fragilis* at Holly Coppice; in many stands of W8 *Fraxinus excelsior*; and in W10 *Quercus robur* on Haughmond Hill. At the base of hedges it is a frequent component of W24 *Rubus fruticosus* in places like Mellin-y-Grogue and Pentre Hodre.

*Prunus domestica* L.

## Wild Plum

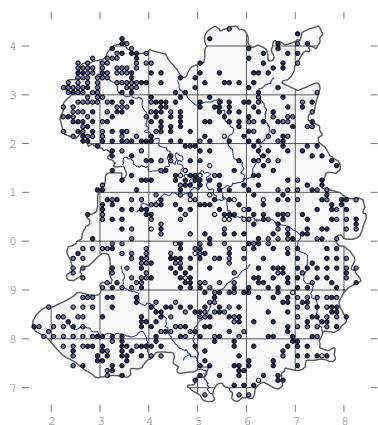
Archaeophyte. Widespread. Stable. Hedges.

First records (as *P. domestica* ssp. *insititia*): Williams, c. 1800, 'hedges about Cronkhill, Downton, Eaton, Harnage, Shawbury and Sundorne.'

The wild plum, or damson, has been widely planted in hedgerows throughout



the county and it seems to occur spontaneously in many places. Cultivated plum is thought to have originated as a cross between *P. cerasifera* and *P. spinosa*, and it is very variable. Wild plums are also variable, and sometimes difficult to distinguish from the hybrid *P. × fruticans* (*spinosa* × *domestica*). There are no confirmed records yet of that taxon in the county. *Prunus domestica* is usually confined to W21 *Crataegus monogyna* or W8 *Fraxinus excelsior* hedges.



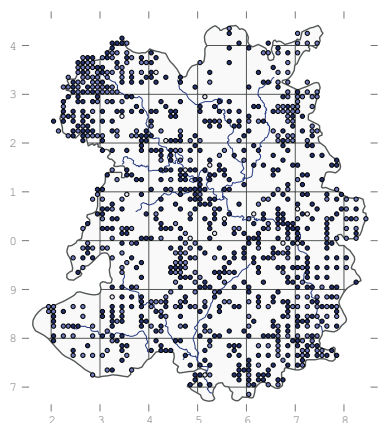
### *Prunus avium* (L.) L.

#### Wild Cherry

Native. Widespread. Stable. Woods, roadsides, gardens.

First record: Williams, c. 1800, 'wood at the back of Sundorne Castle.'

Native in neutral to calcareous woods, mainly W8 *Fraxinus excelsior* woodland in places like Bomere Pool, Bushmoor Coppice, Tick Wood (Trueman, 1981) and Sodylt Wood, and sometimes in W10 *Quercus robur* woodland as on Haughmond Hill. It is also widely planted on roadside hedges, in parks and in plantation woodlands, where it reproduces freely by seed. Absent from the summits of the higher hills.



### *Prunus cerasus* L.

#### Dwarf Cherry

Archaeophyte. Rare. Status uncertain. Gardens, hedges.

Only a few records: Wyre Forest (G. Jordan, 1841, CGE), West Felton (Leighton, 1841), Shrawardine (Miss Lloyd, 1864), Bomere Pool (W. Phillips, 1878), Hengoed and Rhydygroesau (both in Diamond 1891), Huglith Hill (R.D. Benson, 1896, SHYB), Selattyn (W. Phillips, <1905), Condover (H.M. Auden, 1907), Bomere Pool (A.D. Skelding, 1951), Harmer Hill and Shotton (both W.A. Thompson, 1996).

### *Prunus serrulata* Lindley

#### Japanese Cherry

Neophyte. Rare.

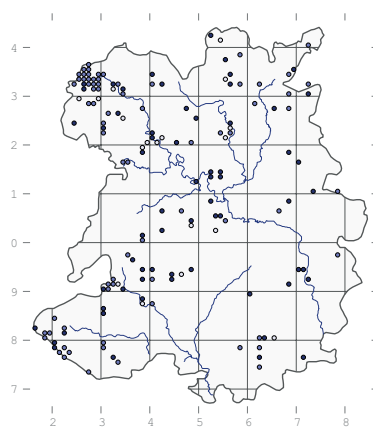
Widely planted in gardens and on roadsides but not naturalised anywhere. Some records are for churchyards, as at Chelmarsh and Ford (both J.A. Thompson, 2005).

### *Prunus padus* L.

#### Bird Cherry

Native. Local. Stable. Axiophyte: riverbanks, hedges and woods.

First records: Williams, c. 1800, 'in the lane between Lydham and Bishops Castle,' and 'by the side of the brook between Ruyton and Dorrington.'



In woodland by rivers, particularly on base-rich peaty soils. A good site for it is Morton Pool, which is in the basin of the diverted River Morda, where it grows in W5 *Alnus glutinosa* woodland and persists in the more drained W6 *Salix × fragilis* woods around. Apart from these peatlands along the Morda and Perry, the other place for it is in the hills in the west, such as the Stiperstones and Plowden Woods. Its native distribution is masked by planting. Sometimes it is vulnerable to insect damage when planted in large stands in hedges, as along the lane south of

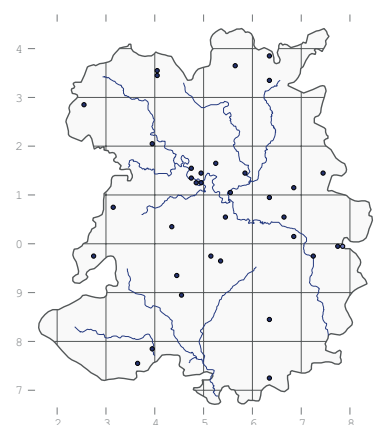
Ruyton-XI-Towns (SJ403220), where many bushes were defoliated by Bird Cherry Ermine moth larvae in 2011.

### *Prunus lusitanica* L.

#### Portugal Laurel

Neophyte. Scattered. Increasing. Woods, gardens, country estates and amenity plantings.

Widely planted in parks and planting schemes but only recorded as self-seeding at Alkmund Park (R.M. Stokes, 1996).

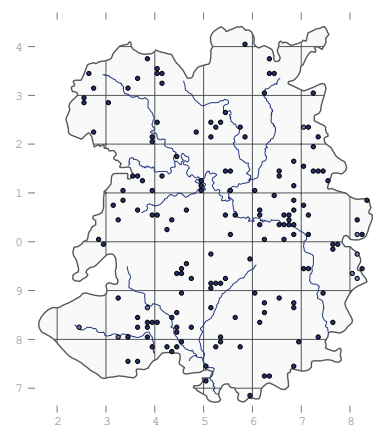


### *Prunus laurocerasus* L.

#### Cherry Laurel

Neophyte. Widespread. Increasing. Woods, gardens, country estates and amenity plantings.

Common in planting schemes, often in woods as cover for game shooting and increasingly turning up in field hedges near houses. Saplings often occur near established bushes, but it does not seem to spread into the wild.



### *Chaenomeles speciosa*

(Sweet) Nakai

#### Japanese Quince

Neophyte. Rare.

Established by a footpath on the route of the old Severn Valley Railway at Sutton, Shrewsbury, in 2002, not far from houses and not really naturalised.

### *Pyrus communis* L.

#### Pear

Archaeophyte. Scattered. Stable. Hedges and gardens.

First record: Leighton, 1841, 'hedges.'

Occasional in hedges and derelict gardens throughout the county; invariably a relic of cultivation.

### *Pyrus salicifolia* Pallas

#### Willow-leaved Pear

Neophyte. Rare. Gardens.

One tree in a hedge by the A442 at Peplow (SJ633228, R.M. Stokes, 2002, BIRM), obviously planted as it is grafted onto *P. communis* rootstock (P. Ingram, 2013); it also widely planted in gardens.

### *Malus sylvestris* (L.) Miller

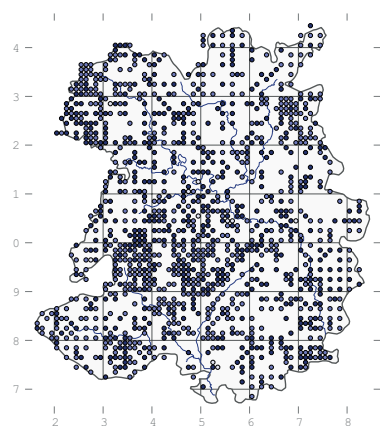
#### Crab Apple

Native. Widespread. Stable. Hedges and woods.

First record (as *Pyrus malus*): Williams, c. 1800, 'hedges, common.'

Pure Crab Apple trees are found in woods and hedges throughout the county, but intermediates with *M. pumila* are much commoner and often it is difficult to separate them. The habitat is usually W8 *Fraxinus excelsior* woodland, as at Craig Syctyn and

along the Borle Brook at New England, or in hedges of similar composition.



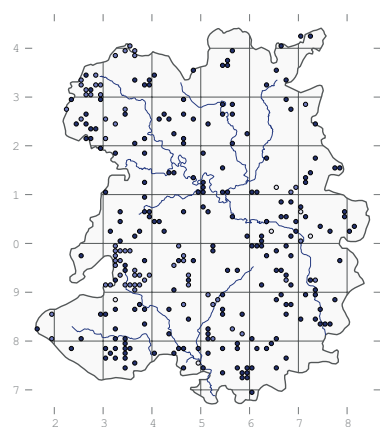
### *Malus pumila* Mill.

#### Apple

Archaeophyte. Widespread. Stable. Gardens, orchards and hedges.

First record (as *Pyrus malus* var. *mitis*): J.H. Thompson, 1882, Highley (ABS).

A widely planted tree, sometimes found in semi-wild situations where orchards have been abandoned or around long derelict cottages. Plants from seed have characters intermediate with those of *M. sylvestris* and are usually recorded as such; for example, the trees on Earl's Hill have grown up from seed and are not true Crab Apples (Sinker & Perring 1987). The habitat of wild sown plants is similar to that of *M. sylvestris*.



### *Sorbus domestica* L.

#### Service-tree

First record: J. Bingham, 1979, Withybed Wood.

A European plant which has probably been cultivated in Britain for centuries but is also present as a rare native species on coastal cliffs. As an introduction it sometimes persists in isolated sites such as in the Wyre Forest and by ruins. Bingham reported five trees in the Shropshire part of the Wyre

Forest at Withybed Wood (SO757769) in 1979, still there in 1991. They are quite old but were undoubtedly planted.

### *Sorbus aucuparia* L.

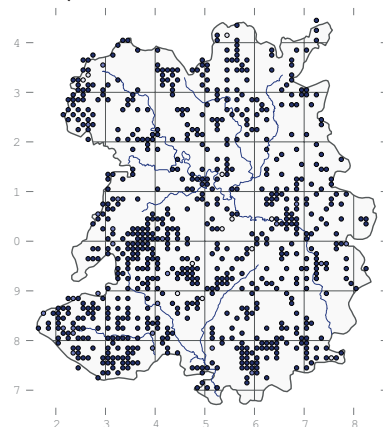
#### Rowan

Native. Widespread. Increasing. Woods, bogs, heathland, hedges and gardens.

First record: L. Brown, 1725, the Stiperstones.

Usually on acid soils but also notably in the Oswestry uplands and along Wenlock Edge where the limestone is leached or overlain by humic soil. It is occasional in W4 *Betula pubescens* woodland in places like Sweat Mere (Trueman, 1980); W5 *Alnus glutinosa* at Black Coppice, Blake Mere, Cole Mere, Kettle Mere and Sweat Mere (J. Mallabar, 1998); W6 *Salix × fragilis* at Brown Moss, Blake Mere and Cole Mere; W7 *Lysimachia nemorum* on the Stiperstones; W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981), Knowle Wood, White Mere and elsewhere; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* in places like Harton Hollow, Haughmond Hill and the Ercall; W16 *Q. petraea* at Oaks Wood, Prees Heath, The Ercall and Poles Coppice; and W17 *Leucobryum glaucum* woodland at Oaks Wood.

Outside woods it has been recorded in S6 *Carex riparia* swamp at Blake Mere (M.J. Wigginton, 1979). In such habitats it usually grows in dry places such as epiphytically on other trees; U1 *Rumex acetosella* at Prees Heath; and U20 *Pteridium aquilinum* at Perkins Beach. Sinker (1985) speculated that it had increased, and that now seems even more likely. The main cause, apart from deliberate plantings, might be a decline in grazing pressure from rabbits or livestock along roadsides and in the increasingly arable parts of the county.



*Sorbus torminalis* at Earl's Hill



*Filipendula vulgaris* on Windmill Hill

***Sorbus intermedia* (Ehrh.)**

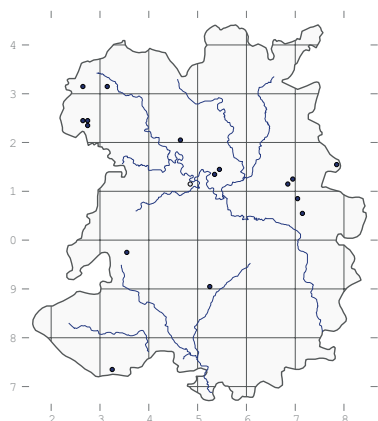
Pers.

**Swedish Whitebeam**

Neophyte. Scattered. Increasing.  
Roadsides, old quarries, parks.

First record (as *Pyrus torminalis*): R.D. Benson, 1893, Kingsland (SHY).

Used on the margins of forestry plantations to provide some diversity, as on Haughmond Hill, and planted as an amenity tree by local authorities, as at Middle Pool, Oakengates (R.M. Stokes, 2005). It has been planted in nature reserves such as Llynclys Hill (J. Pedlow det. P.J.M. Nethercott, 1990) and Merrington Green (J.H.S. Cox, 1991) and in old quarries and mine restoration areas such as Llynclys Quarry (D.H. Wrench, 2005, conf. T.C.G. Rich, BIRM) and The Bog (Whild, 2005, conf. Rich, BIRM). There are a few instances of it suckering or growing from seed, but it only spreads slowly.

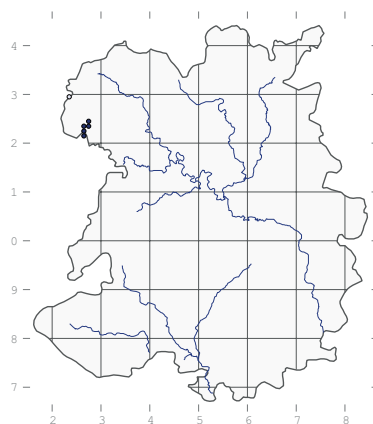
***Sorbus anglica* Hedlund****English Whitebeam**

Native. Rare. Stable. Axiphyte:  
woodland and scrub.

First records (as *Pyrus aria*): T. Salwey (conf. Leighton), 1841, Blodwel Rock and Craig-y-rhiw.

A rare endemic that occurs in a few sites in western Britain between Devon and North Wales and in one place in Ireland. The species was described in 1914, but it was not until S.M. Walters collected it at Blodwel Rock in 1955 that it was known to occur in Shropshire. However, T. Salwey had collected specimens from the same place which were seen and described by Leighton. The description, 'leaves on downy stalks, often minutely lobed at the margin,' suggests that it probably was *S. anglica*. It grows on Blodwel Rocks and on the adjacent Llynclys Hill, and a total of 24 trees were counted in 2011 by T.C.G. Rich. The habitat is best described as open W8

*Fraxinus excelsior* woodland. Salwey's record from Craig-y-rhiw is intriguing: it has not been found since then on this limestone ridge (where *S. aria* has recently been planted).

***Sorbus cuneifolia* T.C.G. Rich**  
**Llangollen Whitebeam**

Native. Rare. Stable. Axiphyte: cliffs.

Two trees on the cliffs at Jacob's Ladder, Llynclys Hill (SJ268232, T.C.G. Rich, 2011, NMW) in its only English site.

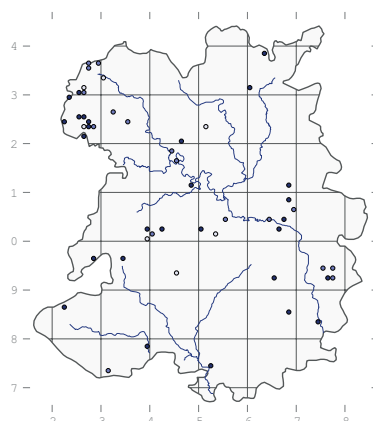
***Sorbus mougeotii* Soy.-Will. & Godr.****Mougeot's Whitebeam**

In plantings on old mine waste at The Bog (SO3597, 2005, det. T.C.G. Rich, BIRM).

***Sorbus aria* (L.) Crantz**  
**Whitebeam**

Neophyte. Occasional. Increasing.  
Roadsides, gardens, hedges and woods.

First record: Serjeantson, 1877, Acton Burnell Park.



Most specimens found in Shropshire are planted, but occasionally it is found as a self-sown tree in limestone quarries such as Butcher's Quarry on Llynclys Hill (first recorded here by E.R. Lloyd in 1926). It is a popular tree with landscape gardeners and is used in land reclamation schemes such as at

The Bog on the Stiperstones or at Ketley Pitmounds (P. Gateley, 2003). It is sometimes planted in field hedges, as at Marchamley Wood (R.D. Porley, 1982) and more often as specimen trees in country estates such as Quinta Park (M.E. Roberts, 1979).

**[*Sorbus rupicola* (Syme) Hedl., Rock Whitebeam**

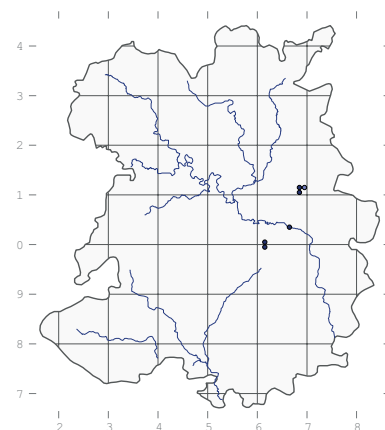
Although Sinker (1985) lists this species as growing at Blodwel Rock, there is no confirmed record of it. E.F. Warburg is said to have recorded it in the 1950s, but no specimen is known, and it is possible that this was confused with S.M. Walters's record of *S. anglica*.]

***Sorbus croceocarpa* P.D. Sell**  
**Orange-berried Whitebeam**

Neophyte. Scarce. Increasing. Quarries and old mine waste.

First record: F.H. Perring, 1974, old mine workings at Wombridge.

Planted and occasionally naturalised. Recorded by W.E. Wiggins in three other places in Telford: Lincoln Hill, Beverley Pitmound and Ketley Pitmounds in 1985 and 1986. P.S. Gateley found it still present at Ketley as recently as 2003. In 1997 R.A. Dawes came across two trees on Wenlock Edge – one large tree along a ride in Blakeway Coppice, and one on the face of a disused limestone quarry near Blakeway Hollow. It seems likely that some trees have been planted as part of a landscaping scheme, and others have sprung up in the vicinity.





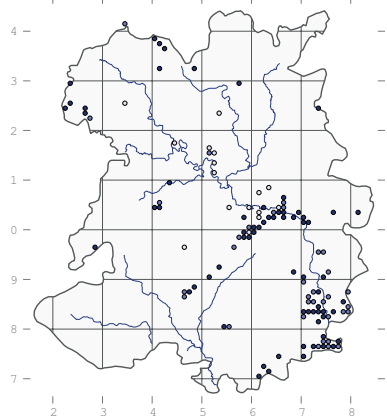
***Sorbus torminalis* (L.) Crantz**

**Wild Service-tree**

Native. Local. Stable. Axioophyte:  
ancient woodland.

First records: Williams, c.1800, 'hedges near Battlefield; in the hedge on the left-hand side of the road between Cound and Cound Moor; on the left hand side of the road above Harley Mill; Mr Burton's wood, Longnor; in the wood at Sundorn; and on the left-hand side of the road between Uffington and the first canal bridge towards Atcham.'

Widespread in ancient woods and hedgerows on calcareous soils, but never abundant and usually present as just one or two individual trees or small clusters of suckering shrubs. Its native habitat is in W8 *Fraxinus excelsior* woods and equivalent hedges in places like Benthall Edge, the Borle Brook at New England, Craig Sychtyn and White Mere. At Earl's Hill it also grows in U1 *Rumex acetosella* grassland on rocks and scree above the woods. It often occurs by footpaths and old boundaries, possibly because it has been planted. Lowland: up to 338 m at Craig-y-rhiw (T. Room, 2007).



***Amelanchier lamarckii* F.-G. Schröder**

**Juneberry**

Neophyte. Rare. Gardens.

Planted in many gardens and shrubberies around the county, but rarely naturalised. There are records of it at Ketley Pitmounds (P.S. Gateley, 2003), Dale Coppice, Halesfield and by the Severn at Bewdley.

***Cotoneaster frigidus* Wallich ex Lindley**

**Tree Cotoneaster**

Neophyte. Rare.

Recorded by D.A. Broughton at Oakwood (SO4490) in 2008.

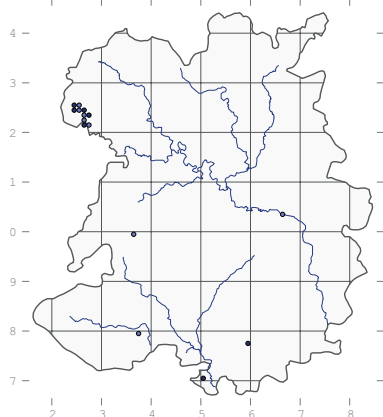
***Cotoneaster integrifolius* (Roxb.) Klotz**

**Small-leaved Cotoneaster**

Neophyte. Scattered. Increasing.  
Limestone grassland.

First record: E.R. Lloyd, 1939, Nantmawr Quarry (*Record of Bare Facts* 49, 1940).

Most plants of the *C. microphyllus* agg. are thought to be *C. integrifolius*, and there are no records of the other members of the aggregate, so for the purposes of this Flora we have lumped all records as *C. integrifolius*. It forms hummocks in grassland and is well known on Moelydd, Llynclys Hill (first recorded by E.M. Rutter in 1954) and Pattens Rock Quarry (W.A. Thompson, 1982). It has also been recorded at Clunbury Hill (J.M. Roper, 1978), Horseditch (G.M. Stone, 1996) and Perkins Beach – 'one plant among old mine workings' (D. Daniels & J.A. Warren, 1982).



***Cotoneaster simonsii* Baker**

**Himalayan Cotoneaster**

Neophyte. Scarce. Stable. Quarries.

Well established at Llanymynech Rocks, where it was first recorded by E.D. Pugh in 1978 (conf. J. Fryer from a specimen collected by M. Wainwright in 1994). It has also been recorded at Chelmarsh Church (J.A. Thompson, 2005), Oswestry Railway Station (Pugh, 1983), Pickstock, (B.R. Fowler, 1976), Shipley (Fowler, 1977), Wootton (Trueman, 2010) and at Dowles (J. Bingham, 1986).

***Cotoneaster horizontalis***

Decne

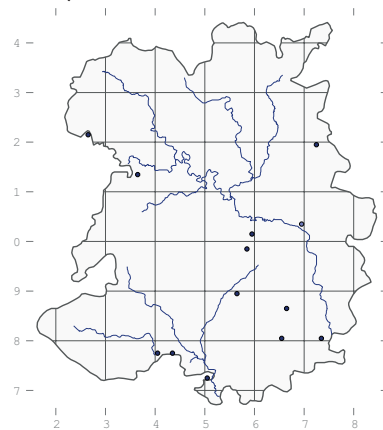
**Wall Cotoneaster**

Neophyte. Scattered. Increasing. Walls, quarries.

First record: M. Wainwright (conf. J. Fryer), 1994, Llanymynech Rocks.

Very common in gardens and often established nearby, making it difficult

to decide whether or not to record it. Sometimes it is completely naturalised, as at Lea Quarry, where it grows on old quarry waste, or at Coppicegate, where it occurs on old walls. In other places it is on walls close to farm buildings and could have been planted, as at Overton (I.P. Green, 2009) but is more likely to have been spread by birds. It is possibly the most widespread cotoneaster in the county.



***Cotoneaster hjelmqvistii***

Flinck & B. Hylmo

**Hjelmqvist's Cotoneaster**

Neophyte. Rare.

Three bushes on a wall in Onibury (P.R. Green and A.C. Leslie, 2010).

***Cotoneaster bullatus* Bois**

**Hollyberry Cotoneaster**

Neophyte. Rare.

On the wall of a closed school in Much Wenlock (K.E. Bull, det. J. Fryer, 1978), at Oswestry Railway Station (J.H. Clarke, 1993), and on Llanymech Hill (M. Wainwright, det. J. Fryer, 1994).

***Cotoneaster rehderi* Pojark.**

**Bullate Cotoneaster**

Neophyte. Rare.

In an abandoned quarry at Poles Coppice (Whild, 2009, BIRM) and Brandhill Gutter (T.C.G. Rich, 2011).

***Cotoneaster dielsianus* E.**

Pritzel ex Diels

**Diels's Cotoneaster**

Neophyte. Rare.

On walls of Ludlow Castle and Dinham Bridge (both K.E. Bull, det. J. Fryer, 1978).

***Crataegus persimilis* Sarg.****Broad-leaved Cockspur-thorn**

Neophyte. Rare.

Planted in a hedge near the new Shrewsbury bypass at Battlefield (SJ515166, 2009).

***Crataegus succulenta* Schrad.****Round-fruited Cockspur-thorn**

Neophyte. Rare.

Planted by a balancing lake at Priorslee (R.M. Stokes, 2004, BIRM) and in a hedge at Radbrook (Stokes, 2009).

***Crataegus monogyna* Jacq.****Hawthorn**

Native. Widespread. Stable. Hedges, scrub, woodland and grassland.

First record: Leighton, 1841, 'many old trees on the south side of Pontesford hill.'

Ubiquitous in woodland, hedges and scrub throughout the county, often planted in hedges where exotic varieties (and even exotic species) are now sometimes used instead (and often recorded as *C. monogyna*). It is native in the understorey of woods, including all W8 *Fraxinus excelsior* woods and in W21 *C. monogyna* scrub, which is the natural precursor of W8 woodland. This process can be seen particularly clearly on Earl's Hill, as the woodland advances up the eastern slopes. It also grows in wet woods such as W1 *Salix cinerea* at Berrington Pool; W4 *Alnus glutinosa* on Haughmond Hill; W5 *Alnus glutinosa* at Haughmond Abbey, Marton Pool, Chirbury, Oss Mere and Top Pool (often as an epiphyte or restricted to hummocks); W6 *Salix × fragilis* in many places; W7 *Lysimachia nemorum* at Birchen Park; in W10 *Quercus robur* everywhere; and in many patches of W23 *Ulex europaeus* and W24 *Rubus fruticosus* scrub and hedges.

There are normally a few hawthorn seedlings in grassland, and it is recorded in CG2 *Avenula pubescens* at Llanymynech Rocks and the Novers (both Trueman, 1981), Craig Sychtyn, Dolgoch Quarry, and elsewhere; CG3 *Bromopsis erecta* at Lea Quarry and Stokes's Barn (Trueman, 1981); MG4 *Sanguisorba officinalis* at Lord's Meadows (Trueman, 1981); MG5 *Festuca rubra* at Bomere Pool and Llynclys Hill; OV23 *Dactylis glomerata* on a road verge at Shipley (Trueman, 1981); and U1 *Rumex*

*acetosella* grassland at Abbot's Castle Hill (Trueman, 2005), Earl's Hill and Prees Heath. On Holloway Rocks it is recorded in OV39 *Asplenium trichomanes* (Trueman, 1981). At Cole Mere it grows in a ditch of S26 *Phragmites australis* fen.

***Crataegus × media* Bechst.**

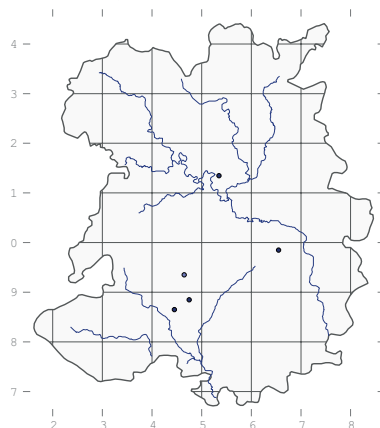
(*C. monogyna* × *laevigata*)

**Hybrid Hawthorn**

Native. Scarce. Stable. Hedges.

First record: Davidson, 1979, 'in an old field hedge at Hazler.'

A rare shrub, occurring as a spontaneous self-sown hybrid in old field hedges at scattered locations throughout the county. Davidson's plant at Hazler had originally been in a farm hedge that was incorporated into a garden as Church Stretton expanded. It also occurs in old field hedges at Wistanstow and near Wolverton. A good place to see it is by the footpath adjacent to Shirlett Farm (SO653987, 2010, BIRM).

***Crataegus rhipidophylla***

Gand.

**Large-sepalled Hawthorn**

Planted in hedges at Gravel Hill (M.A. Spencer, 2010), Coppicegate and Woodhill.

***Crataegus laevigata* (Poiret)**

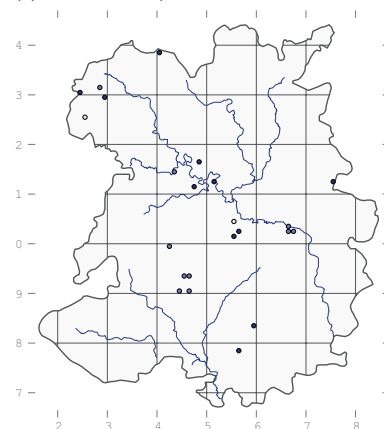
DC.

**Midland Hawthorn**

Native. Scattered. Stable. Hedges.

First records: Benthall, Broseley, etc., T.A. Hulse & G. Potts, 1944.

Sinker (1985) considered that all Midland Hawthorns in the county were planted – usually the pink-flowered, ornamental variety, in parks and gardens. However wild, white-flowered plants occur in hedges, such as by the railway bridge at Newton (SJ481166) and around Bullhill (SJ558019). It appears to be an occasional component of ancient, species-rich field hedges. It comes into leaf a short while before *C. monogyna* and flowers a fortnight earlier, usually in April rather than May, and is therefore more easily spotted early in the year; although identification by leaf shape is not reliable early in the year, as the first leaves of *C. monogyna* are sometimes barely lobed. A good place to see it is in the hedge by the footpath Weir Hill Farm (SJ519120, 2009).

***Filipendula vulgaris* Moench****Dropwort**

Native. Rare. Stable. Axiphyte: calcareous grassland.

First record: Williams, c. 1800, 'round the limestone quarries at Farley.'

Rare in MG5 *Festuca rubra* and CG2 *Avenula pubescens* on Windmill Hill, where it was first recorded by W.E. Beckwith in 1880; and in MG1e *Arrhenatherum elatius* grassland on the verge of a track along Wenlock Edge at Roman Bank, where it was found by J. Clayfield in 2005. It was formerly known on Gleedon Hill between 1800 (Williams) and 1976 (B.W. Wood) and in an unimproved meadow near the Borle Brook at Newlands (R.G. Kemp, 1982). There are also recent records of it on waste ground at Hadley and a roadside at Longden (R.M. Stokes, 1997 and 2010), where it may have been a garden escape.

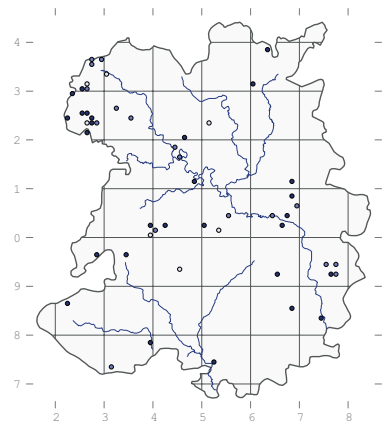
## *Filipendula ulmaria* (L.)

Maxim.

### Meadowsweet

Native. Widespread. Stable. Fens, swamps, wet grassland, ditches.

First record (as *Spiraea ulmaria*): Williams, c. 1800, 'moors and moist meadows, common.'



Common in ditches and damp hollows on roadsides throughout the county. It is occasional in damp grassland such as MG1 *Arrhenatherum elatius* along the Llangollen Canal at Welshampton and by the Severn in Shrewsbury; MG5 *Festuca rubra* in Derrington Meadow (Trueman, 1981); MG8 *Caltha palustris* at Melverley Farm, Morton Pool and Ruewood; and MG10 *Holcus lanatus* at Hope Coppice and Fenemere (C. Walker, 1988).

It is most abundant in mires, including all stands of M22 *Juncus subnodulosus*; M23 *Juncus effusus* at Black Coppice, Ruewood and Sweat Mere; M24 *Cirsium dissectum* at Black Coppice; and of course all stands of M27 *F. ulmaria*, being especially abundant at Black Coppice and Berrington Pool. Some of the open vegetation communities are very similar, such as OV26 *Epilobium hirsutum* in the Old River Bed and by the Severn in Shrewsbury; and OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979).

In swamps it is found in S3 *Carex paniculata* at Fenemere (C. Walker, 1988); S7 *C. acutiformis* and S10 *Equisetum fluviatile* in the Old River Bed; S18 *C. otrubae* at the Speller; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Marton Pool, Chirbury, and by the Shrewsbury Canal at Wappenshall; and S28 *Phalaris arundinacea* at Hendre.

Finally, it is a component of the ground flora of all W5 *Alnus glutinosa* woods; W6 *Salix × fragilis* in places like Cosford Wood and Redhill Coppice;

W7 *Lysimachia nemorum* at Limekiln Wood (Trueman, 1981); W8 *Fraxinus excelsior* at Llyncllys Hill, Wilderhope and elsewhere; W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* on Haughmond Hill.

[*Rubus chamaemorus* L., Cloudberry

Recorded at Hodnet by Rev. R. Heber in about 1800. Leighton (141) considered it an error, but there could arguably have been suitable habitat at Hodnet Heath or Prees Heath (it has subsequently been found at Whixall Moss, but only on the Welsh side). It was also listed by Diamond (1891) for Selattyn Hill.]

## *Rubus tricolor* Focke

### Chinese Bramble

Naturalised for a while by the Severn near Greyfriars Bridge in Shrewsbury (2004, BIRM), but later eradicated during construction of a housing estate. Frequently planted elsewhere.

## *Rubus saxatilis* L.

### Stone Bramble

Native. Rare. Decreasing. Axiohyte: limestone woods.

First record: L. Brown, 1726, 'Combe Floyd' (possibly Cwm Frydd).

Typical of damp rock faces in limestone ravines in Wales, northern England and Scotland, and formerly just reaching into the western fringes of Shropshire. It has been recorded recently only at Craig Sychtyn between 1866 (W. Whitwell) and 1991 (R.M. Stokes), but has formerly been reported from the Stiperstones (A. Aikin, 1805), Trefonen (O.M. Feilden, 1891) and the Wyre Forest (W. Mathews, 1846).

## *Rubus idaeus* L.

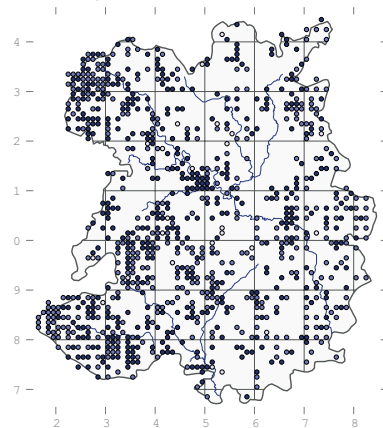
### Raspberry

Native. Widespread. Stable. Woods, scrub and marshes.

First record: 'a student in physick', 1727, 'near Henley Wood'.

Occasional in hedges, woods and on waste ground where it is sometimes a relic of cultivation and sometimes either native or bird-sown. It tends to occur in wet places, possibly because they are more likely to be neglected and ungrazed. There are records of it in M27 *Filipendula ulmaria* in clearings in Tunstall Wood; W5 *Alnus glutinosa* at Morton Pool (D.H. Wrench, 1991), Oxon Pool and Shrawardine Pool; W6 *Salix × fragilis* at Marton Pool Chirbury, Sweat Mere and White

Mere; W6b *Salix fragilis* at Marton Pool Chirbury; W6d *Sambucus nigra* by the Severn in Shrewsbury; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Cole Mere and Shrawardine Pool; and W24 *Rubus fruticosus* scrub on waste ground at Ironbridge (Trueman, 1981).



## *Rubus fruticosus*

### Bramble

Native. Widespread. Increasing. Grassland, scrub and woodland.

First record: A. Aikin, 1796, 'the sheltered lane from Nesscliffe to the quarries produces blackberries uncommonly large and well-flavoured'.

Many types of bramble have been named over the years, but the taxonomy changes and old specimens need modern determinations. For all practical purposes (other than gastronomy), the aggregate is best considered a species and the named microspecies merely varieties.

One of the main habitats for it is grassland, especially in the less intensively managed stands in quarries and marginal places. Examples include CG2 *Avenula pubescens* at Craig Sychtyn and Llanymynech Rocks (Trueman, 1981), CG3 *Bromopsis erecta* at Lea Quarry and CG7 *Thymus polytrichus* at Lilleshall Quarry. It is very common in MG1 *Arrhenatherum elatius* on roadsides, waste ground and field margins throughout, and in MG5 *Festuca rubra* wherever the management is slightly lax, as on Llyncllys Hill. It is also frequent in U1 *Rumex acetosella* in places like Earl's Hill and Prees Heath, and U2 *Deschampsia flexuosa* at Brown Moss.

The other main habitat is woodland, and it is unusual in being recorded in all the types that occur in the county. There are records of it in W1 *Salix cinerea* at Berrington Pool; W4 *Betula pubescens* on Haughmond Hill and elsewhere; in all stands of W5 *Alnus*



*glutinosa*, W6 *Salix* × *fragilis* and W7 *Lysimachia nemorum* woodland; in W8 *Fraxinus excelsior* and W10 *Quercus robur* everywhere; in W16 & W17 *Leucobryum glaucum* at Oaks Wood and elsewhere; and in all stands of W21 *Prunus spinosa*, W23 *Ulex europaeus* and W24 *Rubus fruticosus* scrub and hedges.

It is less common in wetlands, although there is one instance of it in A8 *Nuphar lutea* community at Betton Pool (Wigginton, 1979) – a pool with marked fluctuations in water level. It grows in M22 *Juncus subnodulosus* at Sweeny Fen and elsewhere; M23 *Juncus effusus* in many places; M25 *Molinia caerulea* at Steel Heath; and M27 *Filipendula ulmaria* at the Mere at Ellesmere. There are also records of it in S6 *Carex riparia* swamp at Blake Mere (Wigginton, 1979); S9 *Carex rostrata* at Berrington Pool (both Wigginton, 1979); S12 *Typha latifolia* at Berrington Pool; S14 *Sparganium erectum* at Betton Pool (Wigginton, 1979); S18 *Carex otrubae* by a pool at the Speller; S26 *Phragmites australis* in the old Shrewsbury Canal at Wappenshall, at Top Pool, and in Black Coppice Meadow; and in S27 *Comarum palustre* fen at the Mere.

Several types of bramble occur in heaths such as H8 *Ulex gallii* at Cramer Gutter, and H9 *Deschampsia flexuosa* and H12 *Vaccinium myrtillus* on the Stiperstones. It is very common in OV23 *Dactylis glomerata* on road verges everywhere, and it is recorded in OV25 *Cirsium arvense* on field margins at Kingshead and OV26 *Epilobium hirsutum* vegetation on river banks and eutrophic lake margins throughout.



The following microspecies, or varieties, have so far been recorded in the county:

- *arrheniiformis* W.C.R. Watson: in SJ32 & SJ41. No details (per. A. Newton).
- *bertramii* G. Braun: as *R. opacus* Focke, E.F. Linton, 1892, Vales

Wood (J. Bot. 31, 21). Also now in several of the mosses on the north Shropshire plain (T.A.W. Davis, E.S. Edees, A.L. Newton & D.P. Earl, 1962-2006).

- *fissus* Lindley: the type specimen is from Vales Wood (E.F. Linton, 1892, LIV), although Leighton may have recorded it earlier at Alkmund Park Wood (<1841, det. J. Lindley & W. Borrer). There are no recent records of it in the county, although A. Wilson (1940) mentions that it occurs in the Clun Forest at 1,430 ft (430 m).
- *nessensis* W. Hall: Alkmund Park, 1836, Leighton (BON); still there in 2011 (A. Van de Beek). Haughmond Park, Leighton & Canon T. Butler (det. Newton), 1847, SHY.
- *plicatus* Weihe & Nees: Alkmund Park (Leighton, 1841); Crose Mere (E.F. Linton, 1892); Bomere Pool (F.A. Rogers, 1894); Whixall Moss (A. Ley, 1895).
- *scissus* W.C.R. Watson: Alkmund Park, 1836, Leighton (BM); still there in 2011 (Van de Beek). Occasional in the north of the county, in places like Brown Moss and Goldstone Common (all Earl, 2006).
- *calvatus* Lees ex Bloxam: first record attributed by W.M. Rogers (*Record of Bare Facts* 5, 1895) to Leighton at Alkmund Park. Recently recorded only from Goldstone Common (Earl, 2006).
- *errabundus* W.C.R. Watson: Oswestry Racecourse (Earl, conf. Newton, 1985) and Cefn Coch (Earl, 2006).
- *gratus* Focke: Vales Wood (Rogers, 1894); High Heath, Hinstock (Edees, 1963, NMW); Hungryhatton and Mill Green (both Earl, 2006).
- *lentiginosus* Lees: on Whixall Moss (A.H. Wolley-Dod, 1900, LIV, NMW), Brown Moss (Newton, 1987) and Steel Heath (Earl, 2006).
- *lindleianus* Lees: widespread. First recorded by Leighton in Shrewsbury in 1847 (BON). Recent records from Goldstone Common, Oswestry Racecourse, Prees Heath, Shrewsbury, etc. (all Earl, 2005+).
- *ludensis* W.C.R. Watson: only at Whitcliffe (A. Ley, 1894, NMW). Still there in 1993 (R.D. Randall, NMW).
- *macrophyllus* Weihe & Nees: first recorded at Grinshill Hill (Rogers, 1894) and Pulverbatch (R.D. Benson,

1894). Widespread, with recent records from many places in the north of the county (Earl, 2006+).

- *platyacanthus* P.J. Müller & Lef.: widespread. First recorded by Leighton on Sharpstones Hill in c. 1841. There are recent records from Prees Heath, Goldstone Common, etc. (all Earl, 2006+).
- *robiae* (Sudre) W.C.R. Watson: occasional. High Heath, Hinstock (Edees, 1963, NMW). Recent records from many places (Earl, 2006+).
- *sciocharis* (Sudre) W.C.R. Watson: Quatford Castle (det. A. Newton), no details.
- *silurum* (Ley) Ley: Bwlch, Cefn Coch, Oswestry Racecourse & Pantglas (all Earl, 2006).
- *sneydii* Edees: Sutton Heath (Newton, c. 1985).
- *varvicensis* Edees: Whitcliffe (W.C.R. Watson, 1953 and Randall, 1995 (both NMW)).
- *amplificatus* Lees: widespread. Type specimen from Welbatch (E. Lees, 1843, CGE). Recent records from Adderley, Norton-in-Hales, Whitchurch, etc. (all Earl, 2006+).
- *boudicca* A.L. Bull & Edees: Diddlebury Common, 1909, A. Ley (det. D.E. Allen, BM).



*Potentilla erecta* (Dan Wrench)



*Comarum palustre*

- *cardiophyllus* Lef & P.J. Müller: widespread. First recorded by Leighton on Haughmond Hill in 1847 (BON). Recent records from Preston Montford, Haughmond Hill, Goldstone Common etc. (Earl, 2005+).
- *incurvatifolius* Edees: listed by Newton in Sinker (1985) for SJ51 (Haughmond Hill area).
- *lindebergii* P.J. Müller: recorded by Benson (det. Rogers) in 1895 at Bridges, Pulverbatch & Wilderley. Recent records from Haughmond Hill (Edees, 1974, NMW and Earl, 2006).
- *nemoralis* P.J. Müller: widespread. First recorded by Leighton at Shawbury Heath (det. Newton, BON, SHY) in 1847. It is now recorded in many places, including Goldstone Common, Prees Heath and Woore (Earl, 2005+).
- *pampinosus* Lees: in the Wyre Forest (E.S. Edees, 1964, NMW).
- *polyanthemus* Lineb.: occasional. E.F. Linton first recorded it (as *R. pulcherrimus*) at Vales Wood in 1892 (LIV). It is now known to be fairly common in places like Oaks Wood (Edees, 1964), Haughmond Hill (V. Gordon, 1975), Pulverbatch (A.K. Thorne, 1992, det. Newton) and Black Park (Earl, 2007).
- *rhombifolius* Weihe ex Boenn.: recorded at Yorton by F.A. Rogers in 1894 and Merrington Green by Edees in 1964 (NMW).
- *rubritinctus* W.C.R. Watson: Vales Wood (E.F. Linton, 1892, LIV), Merrington Green (Edees, 1963, NMW) Stapleton (Edees, 1964, NMW).
- *subinermoides* Druce: listed by Newton in Sinker (1985) for Sutton Heath.
- *sprengelii* Weihe: widespread. First recorded by Wolley-Dod in 1892 at Woore (LIV). Recent records from Brown Moss, Haughmond Hill, Steel Heath, etc. (all Earl, 2006+).
- *armeniacus* Focke: recorded by Earl in Shrewsbury, Prees Heath, Whitchurch, etc. (2005+).
- *armipotens* W.C. Barton ex Newton: listed by Newton in Sinker (1985) in several places without details.
- *rossensis* Newton: recorded at Haughmond Hill by Earl in 2006 (BIRM).
- *ulmifolius* Schott. Schott: widespread.
- *bartonii* Newton: Occasional. First recorded at Clun by Edees (1960, NMW). Recent records for Shrewsbury, Haughmond Hill, Chirk Bank, etc. (all Earl, 2005+).
- *criniger* (E.F. Linton) Rogers: listed by Newton in Sinker (1985) in SJ51 and SJ63 without details.
- *painteri* Edees: Goldstone Common (Earl, 2006).
- *vestitus* Weihe: widespread. First recorded by Leighton in 1847 at the base of the Wrekin and at Copthorne (both BON). Recent records throughout the north of the county by Earl (2005+).
- *fuscicortex* Sudre: Haughmond Hill (Edees, 1974, NMW); still there in 2006 (Earl, BIRM). Also at Cobscot, Norton-in-Hales and Rooms Farm (all Earl, 2006+).
- *mucronulatus* Boreau: Shawbury Heath (Leighton, 1847, BON); Flannog Wood, Plas Warren & Sodylt Wood (all Earl, 2006).
- *wirralensis* Newton: Merrington Green (Edees, 1963, NMW) and Old Woodhouses (Earl, 2007).
- *diversus* W.C.R. Watson: Minsterley (Edees, 1964) and Earl's Hill (V. Gordon & Perring, 1975, LIV).
- *griffithianus* Rogers: Marshbrook (A. Ley & Rogers, 1909, LIV). Bwlch and Oswestry Racecourse (both Earl, 2006).
- *leightonii* Lees ex Leighton. Widespread. In a hedge in Burrs Field, Shrewsbury (Leighton, 1836, CGE). Recent records from Goldstone Common, Haughmond Hill, Prees Heath, Steel Heath, etc. (all Earl, 2005+).
- *micans* Godron: recorded as *R. anglosaxonicus* at Oakeley Wood (1897) and Wombridge (1901) (both W.H. Painter, det. Rogers).
- *raduloides* (Rogers) Sudre: several old records, including Bridges (R.D. Benson, 1895, det. Rogers) and Wenlock Edge (Ley, 1909, det. Rogers). The only recent record is from Earl's Hill (Newton, in Sinker (1985)).
- *anglofuscus* Edees: Claverley (1952), the Wrekin (1963) and Puleston Common (1963) (all Edees, NMW).
- *dentatifolius* (Briggs) W.C.R. Watson: Stapleton (Edees, 1964, NMW).
- *distractiformis* Newton: Hollyhurst Wood (Earl, 2007).
- *infestus* Weihe ex Boenn.: Haughmond Hill and Steel Heath (both Earl, 2006).
- *leyanus* Rogers: Roman Bank (Ley, 1904).
- *pascuorum* W.C.R. Watson: frequent. First recorded by Benson in 1894 at Oaks and Pulverbatch. Recent records from Goldstone Common, Haughmond Hill, Whitchurch, etc. (D.P. Earl, 2006+).
- *adenanthoides* Newton: several old records. The only recent one is from the Wrekin (Randall, conf. Newton, 1992, NMW).
- *bloxamii* (Bab.) Lees: apparently one old record from SJ62; no details available.
- *condensatus* P.J. Müller: Wyre Forest (Ley, 1904, det. Newton, LIV, NMW), Wenlock Edge (Rogers, 1909, det. Edees, NMW), and Billingsley (Edees, 1965, NMW).
- *echinatooides* (Rogers) Dallman: 'near Lawn Farm and cottage' (Benson, 1895, det. Rogers), Woore (Edees, 1967, NMW).
- *echinatus* Lindley: widespread. First record: Leighton, c. 1841, Alkmund Park, det. J. Lindley. Recent records from Haughmond Hill (Gordon, 1976) and The Sytch (Earl, 2006).
- *euryanthemus* W.C.R. Watson: Benthall Edge (W.H. Painter, 1894), Wellington (Painter, 1900, both det. Randall, NMW) and Woore (Edees, 1968, NMW).
- *flexuosus* P.J. Müller & Lef.: there is an old record from SO77 with no date or details.
- *fuscus* Weihe: a specimen collected by Leighton from Shawbury Heath in 1847 (SHY) was determined by Newton in 1976.
- *informifolius* Edees: Chorley (1865), Wyre Forest (1965) and Burwarton (1975, all Edees, NMW).
- *insectifolius* Lef. & P.J. Müller: occasional. First recorded by Painter at Benthall Edge in 1896 (LIV). Recent records from Pigeon's Rough, Haughmond Hill and the Sytch (all Earl, 2005+).
- *longithyriger* Lees ex Focke: Chorley Covert (Edees, 1965, NMW) and Bringewood Chase (Randall, 1995, NMW).



- *pallidus* Weihe: first record by Leighton in c. 1841, from the foot of Haughmond Hill. Still there in 1975 (Gordon, LIV). Also recorded by Ley at Benthall Edge in 1904.
- *rubristylus* W.C.R. Watson: widespread. First recorded by E.F. Linton at Vales Wood in 1892 (LIV, NMW). Recent records from Brown Moss, Goldstone Common, Old Woodhouses, Whitchurch, etc. (Earl, 2006+).
- *rudis* Weihe: in the railway cutting in Farley Dingle (Painter, 1901, conf. Newton).
- *rufescens* Lef. & P.J. Müller: Benthall Edge (Painter, 1896, NMW), Ebnal (Wolley-Dod, 1905, LIV) and Chorley Covert (Edees, 1965, NMW).
- *subtercanens* W.C.R. Watson: the Wrekin (Edees, 1963, NMW).
- *bercheriensis* (Druce ex Rogers) Rogers: Oaks Wood (Edees, 1964, NMW).
- *dasyphyllus* (Rogers) E. Marshall: frequent. First recorded by Leighton at Alkmund Park, Haughmond Hill and the Wrekin in 1847 (det. Newton, BON, SHY). Recent records from Selattyn, Prees Heath, Shavington Park, etc. (Earl, 2005+).
- *hylocharis* W.C.R. Watson: scattered. Vales Wood (E.F. Linton, 1892, LIV), Merrington (Edees, 1963, NMW), Wilderley and Pulverbatch (both Thorne, 1992, det. Newton), Brown Moss, Hungryhatton and Lightwood (all Earl, 2006).
- *murrayi* Sudre: Wenlock Edge (Ley, 1904), Woore (Edees, 1967), Ercall Heath and the Sytch (both Earl, 2006).
- *conjungens* (Bab.) Rogers: collected by Leighton in hedges at Crowmeole, near Shrewsbury, in 1847 (BON, CGE, LIV).
- *eboracensis* W.C.R. Watson: widespread. First recorded by Edees at Whixall Moss in 1966 (NMW). Recent records from Market Drayton, Prees Heath, Preston Montford, etc. (all Earl, 2005+).
- *hindii* A.L. Bull: scattered. Selattyn Hill, Norton-in-Hales, Woore, etc. (Earl, 2006+).
- *intensior* Edees: widespread. Bearstone, Betton, Dorrington, Goldstone Common, Woore, etc. (all Earl, 2006+).

- *memorosus* Hayne & Willd.: there is one confirmed record from SJ70, but no details are known.
- *pruinosis* Arrh.: scattered. The first record is by Williams in 1801 (det. Edees, LINN) from an unknown location. The only recent record is by Earl at Castle Hill in 2007.
- *rubriflorus* Purchas: recorded at Weston Heath (SJ7713) by Newton in 1988, but this is only in modern Shropshire, not in v.c. 40. Lloyd & Rutter (1957) also listed it for the county, without details.
- *tuberculatus* Bab.: widespread. First recorded by Leighton at Redhill (SJ4609) in 1847 (CGE). This is one of the commonest brambles, and it has recently been recorded throughout the north of the county by Earl (2005+).
- *warrenii* Sudre: Betton and Ightfield (Earl, 2006 & 2008).

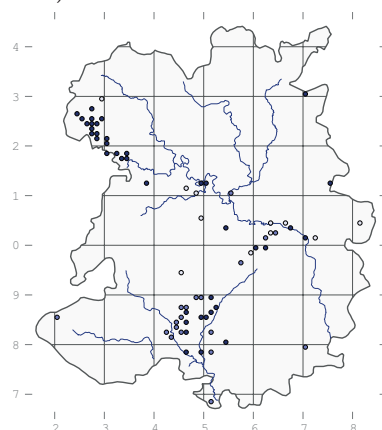
## *Rubus caesius* L.

### Dewberry

Native. Local. Stable. Hedges and scrub.

First record: Williams, c. 1800, 'hedges, common.'

Largely restricted to calcareous soils, where it usually grows in hedges and low scrub alongside paths, typically in W21 *Crataegus monogyna* and W8 *Fraxinus excelsior* hedges. At Sweeny Fen it occurs in scrub invading M22 *Juncus subnodulosus* mire (C. O'Reilly, 2007). Good places to look for it include Benthall Edge (A.K. Thorne, 2005, conf. A.L. Newton), Blakeway Hollow and Corfton Bache (H. Hand, 1977).



## *Potentilla fruticosa* L.

### Shrubby Cinquefoil

A garden escape at an old airfield at Eaton-on-Tern (R.B. Lees, 1977).

## *Potentilla anserina* L.

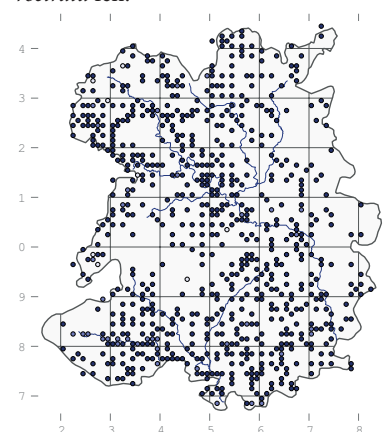
### Silverweed

Native. Widespread. Stable. Pool margins, damp grassland, fens and river banks.

First record: Williams, 1798, 'a specimen with 4 leaves to the blossom and 8 to the calyx, at Pitchford Forge.'

Widespread in damp hollows and shallow ditches on roadsides throughout the county, where it is tolerant of winter flooding and it is well adapted to spread over muddy or stony surfaces by forming a flat, stoloniferous mat. It also has a more upright form in taller grassland and fens, where it can compete in closed vegetation. It is perhaps most common in MG1 *Arrhenatherum elatius* grassland and other roadside communities such as OV23 *Dactylis glomerata*. It is also recorded in MG5 *Festuca rubra* on Haughmond Hill; MG9 *Deschampsia cespitosa* at Hill Houses; both MG10 *Holcus lanatus* and MG13 *Alopecurus geniculatus* grassland around pools at Brown Moss; M23 *Juncus effusus* at Cole Mere (M.J. Wigginton, 1979) and Sweat Mere; M24 *Cirsium dissectum* at Black Coppice; M27 *Filipendula ulmaria* at Cole Mere; OV30 *Bidens tripartita* at Brown Moss and White Mere (Wigginton, 1979); OV31 *Rorippa palustris* at Fenemere (Wigginton, 1979); and OV32 *Ranunculus sceleratus* at Crose Mere.

In a ditch at Cole Mere it grows in S26 *Phragmites australis* fen and at Berrington Pool and Brown Moss (Trueman, 1981) it is recorded in *Carex rostrata* fen.





## *Potentilla indica* (Jacks.) Wolf Yellow-flowered Strawberry

A garden escape at Harmer Hill, collected (as *Duchesnia indica*) by N.J. Dandy in 1968 (*Transactions* 1968-1972, BM) and in the churchyard and adjacent lane at Stanton Lacy (P.R. Green, 2009).

## *Potentilla argentea* L. Hoary Cinquefoil

Native. Scarce. Stable. Axiphyte: acid grassland.

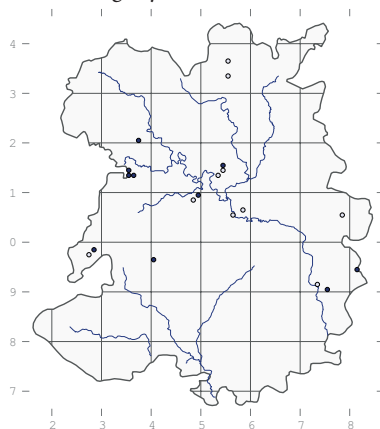
First record: Williams, c. 1800, 'pastures and ditch-banks in a gravelly soil. By the side of Cound Park-walls.'

Occasional in short grassland and on rock exposures. Recent sites include Haughmond Abbey, where it grows on ruined walls and it was first recorded by Leighton in 1836; a roadside bank near the A5 at Wolf's Head (B.J. Laney, 2008); Loton Park, where it has been known since 1979 (S. Stafford); and Abbot's Castle Hill, where it grows in U1 *Rumex acetosella* grassland.

There are older records for Bowmanshill (W.P. Brookes, 1841), Dryton (R.M. Serjeantson, 1881), Gags Hill (Trueman, 1986), Haughmond Hill (O.M. Feilden, 1909), Marrington Dingle (Hamilton, 1894), Prees Heath (A.H. Wolley-Dod, 1900), Ruckley

Wood (G. Lloyd, 1841), Sharpstones Hill (H.L. Jones, 1878 – A.K. Thorne, 1988) and The Knoll, Priestweston (M. Smith, 1990).

In 2001 it came up on disturbed soil in a garden at Ratlinghope (SO402966, P.G. Green, BIRM). Most of these sites are at around 100 m above sea level, rising to 240 m at The Knoll and 294 m on the Long Mynd.



## *Potentilla recta* L. Sulphur Cinquefoil

Neophyte. Scattered. Stable. Roadsides.

First record: J.C. Melvill, 1924, 'Meole Brace, quite fine, coming up adventitiously.'

Occasionally established on waste ground, as at Wellington (W.A. Thompson, 1982) or at Coton Hill railway sidings (R.M. Stokes, 1994).

## *Potentilla norvegica* L. Ternate-leaved Cinquefoil

One plant on Wenlock Edge in 1931 (G. Potts, conf. A.A. Dallman) and 'opposite Pont-faen Bridge' (E.R. Lloyd, 1939).

## *Potentilla rivalis* Nutt. ex Torr. & A. Gray

### Brook Cinquefoil

Neophyte. Rare. Last recorded in 1993. Pools.

The only recorded site for this North American plant in Britain is at Barnsley Pool (SO7592), where it was collected in 1978 by S.R. Price and was last recorded by Joan Brown in 1993.

## *Potentilla tabernaemontani* Asch

### Spring Cinquefoil

Native. Last seen in 1841. Roadsides.

There are just a few old records. Williams recorded it in about 1800 in the lane between Cound and Golding. In Leighton's Flora of 1841,

M. McGhie is credited with four records, as follows: 'Clee Hill on the Bridgnorth Road,' 'on the bank going up to Steventon Cottage,' 'to Ashford towards Caynham House,' and 'on the bank going up Whitcliffe Woods.' These are all fairly clearly roadsides. It is naturally a plant of bare calcareous habitats such as rock ledges on mountains and coastal cliffs, and it is conceivable that it was established as a roadside casual in Shropshire in the 18<sup>th</sup> century (Williams was born in 1762 and Mary McGhie in about 1770). But it is equally possible that McGhie's records in particular are wrong, and some other species was intended.

## *Potentilla erecta* (L.) Raeusch. Tormentil

Native. Local. Stable. Acid grassland, mires and heaths.

First record (as *Tormentilla officinalis*): Williams, c. 1800, 'ditch banks about Cound, Pitchford, between Faintree and Neenton, about Hopton in the Hole and Stoke St Milborough.'

Usually on acid soils but sometimes in calcareous habitats such as CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981). It is often found in heathland such as H9 *Deschampsia flexuosa* on the Stiperstones and H12 *Vaccinium myrtillus* at Rhos Fiddle and the Stiperstones.

In grassland it is found in MG4 *Sanguisorba officinalis* at Lord's Meadows (Trueman, 1981); MG5 *Festuca rubra* everywhere; MG6 *Cynosurus cristatus* at Cramer Gutter; MG8 *Caltha palustris* at Morton Pool; and MG9 *Deschampsia cespitosa* at Hill Houses.

Possibly the most distinctive habitat for it is M25 *Molinia caerulea*, which is found in drying peat bogs such as Steel Heath, in peaty lowland meadows such as the one at Black Coppice, and in upland mires at Shelve Pool (Trueman, 1981). In other mires, it is recorded in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983) and Stapeley Hill (Trueman, 1981), M10 *Carex dioica* on Titterstone Clee (A.K. Thorne, 1999), M15 *Trichophorum germanicum* at Cramer Gutter, M22 *Juncus subnodulosus* at Morton Pool (Trueman, 1981), M23 *Juncus effusus* in many places, M24 *Cirsium dissectum* at Cole Mere and M35 *Montia fontana* in Carding Mill Valley (Tapper, 1983). On the edge of Black Coppice it grows in S26 *Phragmites australis* fen, but otherwise it seems absent from

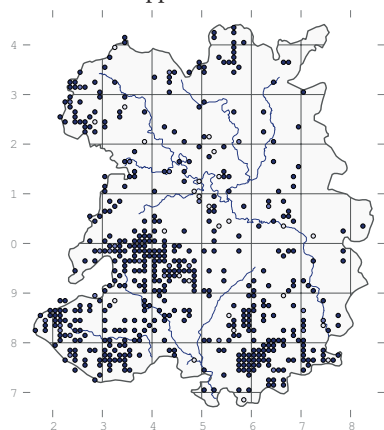


*Fragaria vesca* (Dan Wrench)



*Geum rivale* at Ruthall

swamp communities. At Prees Heath it occurs rather atypically in U1 *Rumex acetosella* grassland but it is frequent in U4 *Agrostis capillaris* and U5 *Nardus stricta* grasslands throughout the uplands. Although it is not very shade tolerant, there are a few records of it in W7 *Lysimachia nemorum* at Brook Vessons, W8 *F. excelsior* at Wilderhope and W10 *Quercus robur* woodland at Bannister's Coppice.

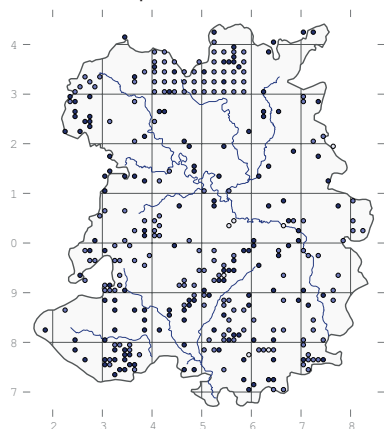


### *Potentilla anglica* Laich.

#### Trailing Tormentil

Native. Local. Stable. Grassland and woodland edges.

First record (as *Tormentilla reptans*): F. Dickinson, 1841, 'side of Stafford Road, one mile from Newport.'



A perennial herb of short grassland and woodland edges. It is recorded in MG5 *Festuca rubra* grassland at Wagbeach (Trueman, 1981) and in MG5a *Lathyrus pratensis* subcommunity in a species-rich meadow called Pudding Bag at Wilderhope. It also grows at Prees Heath in U1 *Rumex acetosella* grassland and in rather open W8 *Fraxinus excelsior* woodland at Wilderhope. The map seems to show a slight preference for base-rich substrates, and it is found on some very alkaline soils, such as limestone quarry waste at the top of Blakeway Coppice. It is notorious for being confused with

other species, and Leighton (1841) even admitted 'this plant I am totally ignorant of.' In Sinker's Flora project the recording was so uneven they decided not to publish the map. Good places to look for it are along the top of Wenlock Edge or on Moelydd. Lowland: at Blakemoorgate on the Stiperstones it occurs at an altitude of 440 m (SJ38010100, Whild, 1995), and it is also recorded up to about 400 m on Titterstone Clee (J. Clayfield, 2006).

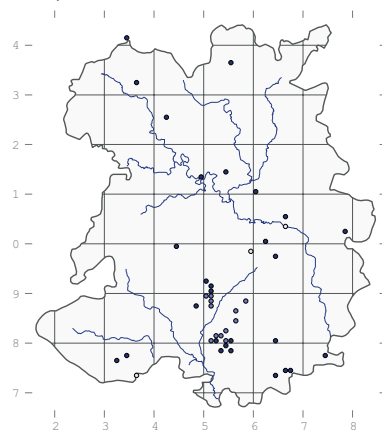
### *Potentilla* × *mixta* Nolte ex Reichb. (*anglica* or *erecta* × *reptans*)

#### Hybrid Cinquefoil

Native. Scattered. Stable. Grassland.

First record: W.H. Painter, 1896, Benthall Edge (*Record of Bare Facts* 6, 1897).

A difficult hybrid, best confirmed by pollen staining to prove sterility, but identified by some experienced botanists in the field. Mary Fuller made many records around Hayton's Bent and Hopton Cangeford in the 1970s and 80s, and some of these have been repeated recently, suggesting that it is relatively common in that part of the county. It is not recorded in any vegetation samples but several records show that it tends to occur in rough grass and on hedge banks, possibly in MG1 *Arrhenatherum elatius* grassland or in MG5 *Festuca rubra* at Eight Acre Farm, Rushbury (D.H. Wrench, 1994). A good place to look for it is in the grounds of Holy Trinity Church, Weston Lullingfields, where it has been collected by J. Ing (conf. B. Harold, 2008). All records are from the lowlands, up to about 230 m at Hayton's Bent (SO525810, M.B. Fuller 1980).



### *Potentilla reptans* L.

#### Creeping Cinquefoil

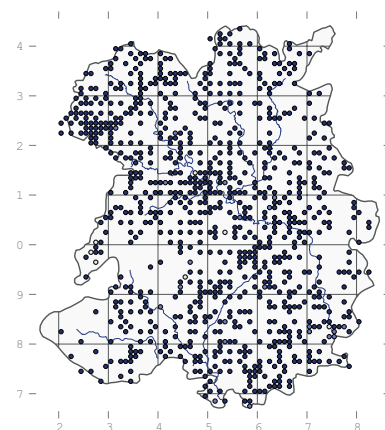
Native. Widespread. Stable. Roadsides, grassland, quarries.

First record: Williams, c. 1800, 'pastures, ditch-banks and sides of roads, common.'

A stoloniferous perennial typical of roadsides, paths and trackways, where it occurs in OV23 *Dactylis glomerata* and often sends runners out onto bare stony, concrete and tarmac surfaces where it is often the only colonist capable of exploiting the available habitat. It occurs in base-rich to neutral habitats, but is absent from the more acid heaths, especially around the Stiperstones, and from the lowland mires.

In grassland it is recorded in CG2 *Avenula pubescens* at Craig-llwyn and Dolgoch quarries; CG3 *Bromopsis erecta* at Lea Quarry and Hilltop Meadow; MG1 *Arrhenatherum elatius* throughout the county; MG5 *Festuca rubra* everywhere; MG8 *Caltha palustris* in places like Morton Pool; and MG9 *Deschampsia cespitosa* at Hill Houses.

In mires it is recorded in M22 *Juncus subnodulosus* at Sweeny Fen; M23 *J. effusus* at Ruewood (P. Welsh, 1981); and M24 *Cirsium dissectum* at Cole Mere.



### *Potentilla sterilis* (L.) Garcke

#### Barren Strawberry

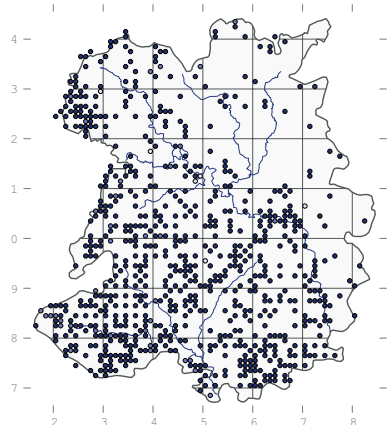
Native. Widespread. Stable.

Hedgebanks, woods, short grassland and quarries.

First record (as *Fragaria sterilis*): Williams, c. 1800, 'barren pastures, common.'

A common perennial herb of free-draining grassy banks by roads, along hedges and in old quarries, usually on slightly base-rich soils and often in rather patchy vegetation with plenty of bare ground. In old limestone quarries it is prolific in CG2 *Avenula pubescens*

in places like Craig Sychtyn and CG3 *Bromopsis erecta* in Lea Quarry, and at Cornbrook it is recorded in CG10 *Helianthemum nummularia* (Trueman, 1981). At Ropewalk Meadow it occurs in MG1e *Centaurea nigra* grassland around the edges of the meadow, and it is recorded in MG5 *Festuca rubra* grassland at Nantmawr (Trueman, 1981), Ropewalk Meadow, Windmill Hill, in MG5c *Danthonia decumbens* grassland at Gilberries Lane, Gretton (D.H. Wrench, 1994), and in Becks Field it occurs in MG6 *Cynosurus cristatus*. An uncommon habitat for it is in an M22 *Juncus subnodulosus* meadow at Sweeny Fen, where there are some patches of drier, raised ground. At Attingham Park and on Earl's Hill it occurs in U1 *Rumex acetosella* grassland and at Cwm Collo it is recorded in U4 *Agrostis capillaris* grassland, which is probably typical of a large number of sites in the uplands. Sometimes it is found in woods, but normally only in clearings or by paths. It is recorded in W8 *Fraxinus excelsior* woodland in many places and W10 *Quercus robur* woodland at Bannister's Coppice. It is rare in the peatlands of north Shropshire where there is little suitable habitat and the soils are too acid, but it is not restricted by altitude in the county, being recorded high on Titterstone Clee and in the Clun Forest.



### *Comarum palustre* L.

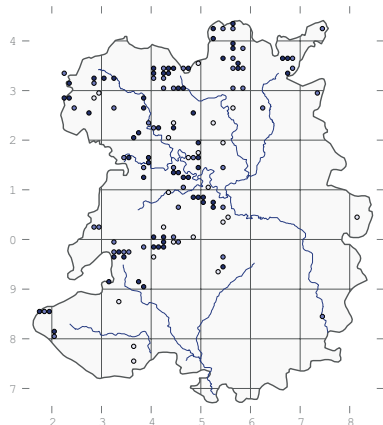
#### Marsh Cinquefoil

Native. Local. Stable. Axiophyte: bogs and fens.

First record: L. Brown, 1726, Bog near Oakeley House, Bishops Castle.

In a variety of wetland habitats, including A10 *Persicaria amphibia* in pools at Brown Moss; M23 *Juncus effusus* at the Mere at Ellesmere (Trueman, 1981); S9 *Carex rostrata* at Berrington Pool (M.J. Wigginton, 1979); S11 *C. vesicaria* at the Long Bog; S12 *Typha latifolia* at Brown Moss, Shrawardine Pool, Snipe Bog and

elsewhere; S24 *Calamagrostis canescens* at Oss Mere (Wigginton, 1979); S26 *Phragmites australis* at Oss Mere; and, most characteristically, S27 *Comarum palustre* at Bomere and Shomere Pools (both Wigginton, 1979), Brown Moss, Snipe Bog and the Moors, Ellesmere. It is less common in woods but it is found in W4 *Betula pubescens* at Lin Can Moss and Shomere Pool; and in W5 *Alnus glutinosa* at Oss Mere and Shomere Pool. It is found as high as 303 m at Shelve Pool (SO334979, Trueman, 1981).

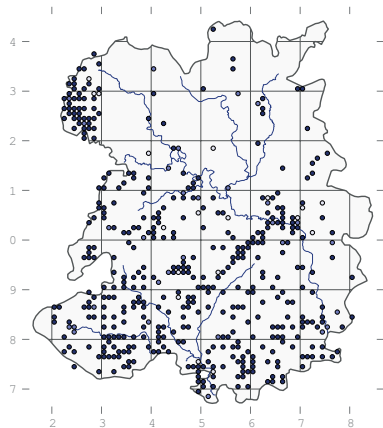


### *Fragaria vesca* L.

#### Wild Strawberry

Native. Local. Stable. Hedges, rock exposures, quarries.

First record: Williams, c. 1800, 'ditch-banks, etc.'



On mildly to strongly calcareous soils, usually in semi-shade or on bare ground with little competition. It is recorded in CG2 *Avenula pubescens* at Blackbridge, Craig-Ilwyn, Dolgoch and Pattens Rock (Trueman 1981) quarries and CG3 *Bromopsis erecta* in Lea Quarry. In Minton Batch it was recorded in CG10 *Helianthemum nummularia* grassland by R. Tapper in 1983. Most records of it are from W8 *Fraxinus excelsior* woods and hedgebanks on base-rich soils throughout, and at Earl's Hill it grows in W21 *Crataegus monogyna* scrub on

the cliffs and screes. It is not restricted by altitude in this county, occurring on spoil heaps high on Titterstone Clee, but it is absent from the moors on many of the higher hills.

### *Fragaria moschata* Miller

#### Hautbois Strawberry

Neophyte. Rare. Stable. Gardens, roadsides, woods.

First record: R.M. Lingwood, 1859, Whitcliffe Woods (CGE).

An uncommon garden escape, recorded recently only at Ron Hill, Cleobury Mortimer (P.R. Green & A.C. Leslie, 2010), where it was naturalised along road verges. A specimen at SHY (J.W. Calcott, 1875) is labelled '*Fragaria elatior*, specimen from Leighton's garden, descendant of wild plants from Stokesay hills.' It has also been recorded at Bridgnorth (W.B. Allen, 1884), Wern (W.P. Phillips, <1905), Pant (A.G. Cook, 1944) and Sweeney (I.R. Bonner, 1969).

### *Fragaria ananassa*

(Duchesne) Duchesne

#### Garden Strawberry

Neophyte. Rare.

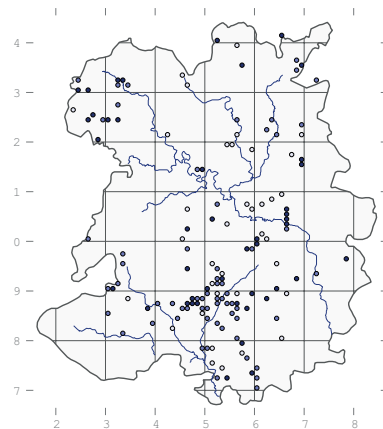
Occasionally established in hedgerows near gardens. The only recent record is from Beckbury (2010), where the verges are widely planted up with garden plants.

### *Geum rivale* L.

#### Water Avens

Native. Local. Decreasing. Axiophyte: calcareous woods and fens.

First records: Williams, c. 1800, 'in a wood by the side of a pool between Golding and the Watling-street road. Ditch-banks in a meadow adjoining Bitterley church. In Cantlop wood. In a boggy copse at the south end of the Wrekin.'



In damp places such as M22 *Juncus subnodulosus* at Sweeny Fen, where it



has been known since 1866 (W. Whitwell); W6 *Salix* × *fragilis* in Loamhole Dingle; and a road verge with W24 *Rubus fruticosus* scrub at Abdon. Elsewhere it occurs in W8 *Fraxinus excelsior* woodland at Benthall Edge, Blakeway Coppice and Harton Hollow.

***Geum* × *intermedium* Ehrh.**  
(*G. rivale* × *urbanum*)

**Hybrid Avens**

Native. Scarce. Stable. Woods.

First record: G. Jordan, 1856, 'Oreton, Farlow & adjacent parts.'

Occasional in damp woods such as W6 *Salix* × *fragilis* in Loamhole Dingle and W8 *Fraxinus excelsior* at Harton Hollow and Blakeway Coppice, and a W24 *Rubus fruticosus* hedge on a road verge at Abdon. There are also recent records for Hobsley Coppice (J. Ing, 2000), Berrymill Wood (J. Clayfield, 2002), Oswestry Racecourse (M.E. Roberts, 2003), and a roadside verge in Trefonen (R.A. Dawes, 2007). Up to 333 m at Abdon (SO58278605, 2012).

***Geum urbanum* L.**

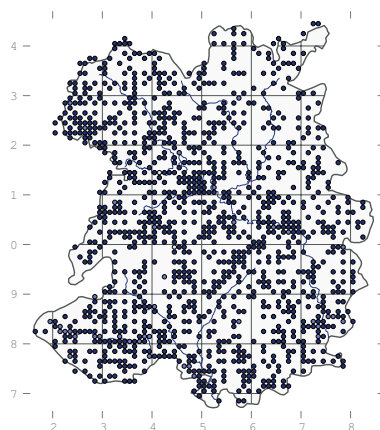
**Wood Avens**

Native. Widespread. Stable. Woods and grassland.

First record: Williams, ca. 1800, 'hedges, common.'

In lowland woods, particularly on limestone or other base-rich soils. It occurs in all W8 *Fraxinus excelsior* woods, where it is often scattered throughout the wood but is most abundant along rides, on the margins and in clearings. It is also common in wet woods such as W5 *Alnus glutinosa* at Cole Mere and Shrawardine Pool; W6 *Salix* × *fragilis* at Blake Mere, Cole Mere, Hencott Pool, Morton Pool, White Mere and by the River Worfe at Beckbury; W7 *Lysimachia nemorum* at Birchen Park and Fastings Coppice; W10 *Quercus robur* at Cole Mere and Haughmond Abbey Wood; W21 *Crataegus monogyna* scrub on Earl's Hill; and a W24 *Rubus fruticosus* hedgebank at Nobold.

In grasslands it is recorded in CG2 *Avenula pubescens* in an old quarry at Craig Sychtyn and CG3 *Bromopsis erecta* in Lea Quarry. In gardens it can be a persistent weed and it is very frequent on roadsides. Altitude: up to 399 m on the Stiperstones (SO36749977, 2005).



***Geum macrophyllum* Willd.**

**Large-leaved Avens**

Naturalised in Bettws-y-crwyn churchyard (Miss Powell, no date ('an old record')) and still there in 2003 (P. Whittle)) and by a stream near a road in Sheriffhales.

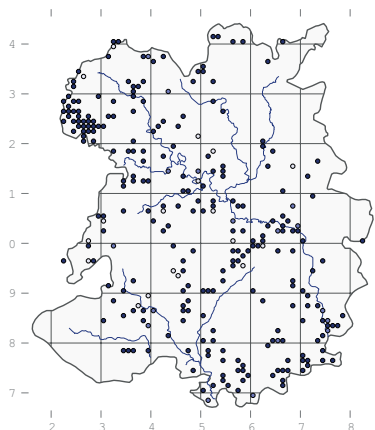
***Agrimonia eupatoria* L.**

**Agrimony**

Native. Widespread. Stable. Road verges, unimproved grassland.

First record: Williams, c. 1800, 'ditch banks and borders of fields; common.'

Typical of grassland, quarries and disturbed soils along track sides, especially in the limestone districts. It is recorded in CG2 *Avenula pubescens* in Dolgoch Quarry; CG3 *Bromopsis erecta* at Lea Quarry and the Foxholes; MG1 *Arrhenatherum elatius* on road verges at Brandwood and Lanegreen; MG1e *Centaurea nigra* on a track side at Roman Bank and a meadow on Windmill Hill; MG5 *Festuca rubra* at Nantmawr, Benthall Hall (both Trueman, 1981) and Bomere Pool; MG9 *Deschampsia cespitosa* on a road verge at Hill Houses; and in M22 *Juncus subnodulosus* at Sweeny Fen (Trueman, 1981).



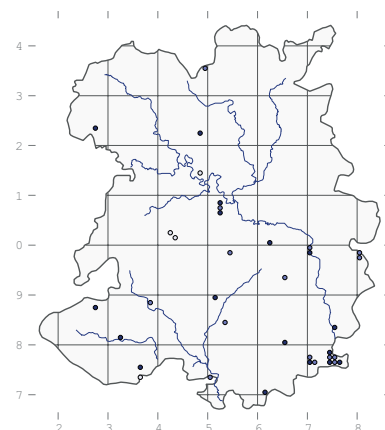
***Agrimonia procera* Wallr.**

**Fragrant Agrimony**

Native. Scarce. Stable. Axiophyte: woodland edges, grassland.

First record: C.C. Babington, 1863, 'marshy ground below a quarry, on the right hand side of the lane leading to Berwick.'

The differences between this species and the previous one are fairly subtle, both in identification and habitat. *Agrimonia procera* is more luxuriant than *A. eupatoria*, with more leafy stems, aromatic glands on the lower side of the leaves and reflexed bristles on the fruits. Melvill, in 1917, described it as a plant of woodland edges rather than roadsides, and the records since then largely support that view. It is most common in the Wyre Forest, where it was first recorded by W.B. Allen in 1904, and has since been found by J. Bingham to be frequent on grassy rides and meadows on the edge of the wood. On Windmill Hill it occurs in MG5 *Festuca rubra* grassland, but noticeably only close to the woodland edge. Sometimes it grows on roadside banks, as in a site near Mainstone.



***Sanguisorba officinalis* L.**

**Great Burnet**

Native. Scarce. Decreasing. Axiophyte: lowland neutral grassland.

First record: R.G. Higgins, 1832, 'side of the canal near the foot-road to Edgmond.'

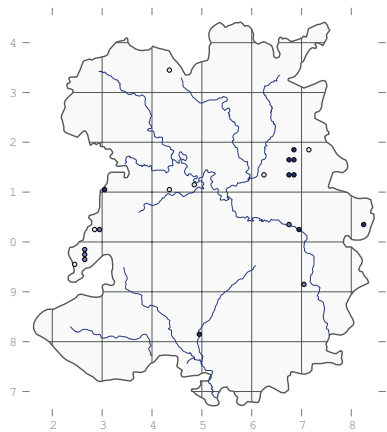
Characteristic of MG4 *S. officinalis* grassland, which occurs in flood meadows throughout lowland England but is very rare in Shropshire, being found as a native plant only at Lord's Meadows near Albrighton, and on the Weald Moors where Higgins made the first record.

It also used to occur in the extensive floodplain around Marrington and Marton, Chirbury, where it was first recorded in 1892 by W. Phillips on a road verge and, although there have

## Vascular plants

been quite a few records since then (most recently by J.M. Roper in 1981), they have all been for hedges and verges, suggesting that it is at best a relic of former habitat.

It still grows wild at Hortonwood in the Weald Moors and is introduced in conservation meadows at Wall Farm on Tibberton Moor. Elsewhere in the county it is a casual or a garden escape in unsuitable habitat.

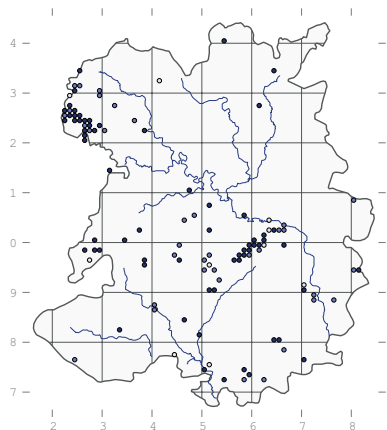


### *Poterium sanguisorba* L.

#### Salad Burnet

Native. Local. Stable. Axiophyte: calcareous grassland.

First records: Williams, c. 1800, Presthope and Farley.



Because this is one of the stronger calcicoles it is most often encountered in quarries, where bare limestone is exposed or spoil has been deposited. It is largely restricted to the Oswestry uplands, Wenlock Edge and Oreton.

It is recorded in CG2 *Avenula pubescens* at Jones's Rough and Llynclys Hill; CG3 *Bromopsis erecta* in Lea Quarry, Lilleshall Quarry and the Foxholes; CG7 *Thymus polytrichus* on Wenlock Edge at Presthope; MG1e *Centaurea nigra* on Windmill Hill; MG5 *Festuca rubra* at Benthall Hall (Trueman, 1981) and Windmill Hill; U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005); and W8

*Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981).

*Poterium sanguisorba* ssp. *balearicum* (Bourg. ex Nyman), Fodder Burnet, has been recorded at Rudge Hall (R.M. Stones, 1996), Yeaton Peverey (D.L. Buckingham, 2000), Nantmawr (J.A. Green, 2002), Granville Country Park (S. Burton, 2004) and Llanfair Waterdine (J. Clayfield, 2006). It is a neophyte, usually introduced with wild flower seed.

### *Acaena novae-zelandiae*

Kirk

#### Pirri-pirri-bur

Neophyte. Rare. Casual. Gardens.

Reported by J.C. Melvill (as *Acaena anserinaefolia*) at Meole Brace in 1919 and by Perring at Marrington Dingle in 1989, but apparently not persisting. Presumably a garden escape in both places.

[*Alchemilla conjuncta* Bab., Silver Lady's-mantle

A specimen was found in the herbarium of the late Rev. H. Sandford, by J.C. Melvill in 1912, was labelled 'near Whitchurch, 1846'. Melvill was of the opinion (*Record of Bare Facts* 22, 1913) that it had been collected from a garden, and there are no subsequent records of it in the wild in Shropshire, although it is quite widely reported as a garden escape elsewhere.]

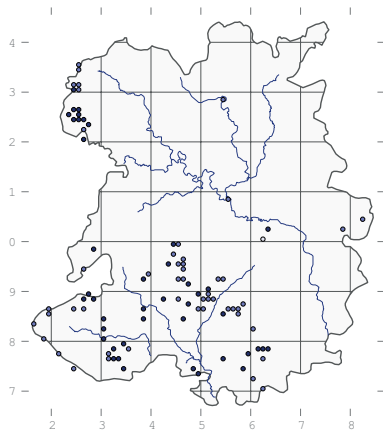
### *Alchemilla xanthochlora*

Rothm.

#### Lady's-mantle

Native. Local. Declining. Axiophyte: species-rich grassland.

First record (as *A. vulgaris*): W.P. Brookes ca. 1840, 'field near Standhill Coppice' (det. Perring, SHY).



In species-rich neutral to calcareous grasslands, fairly frequent in the Oswestry uplands and the south Shropshire hills, with a few outliers in

places such as Hillcop Bank near Lee Brockhurst (A.M. Stirling, 1957). It still grows in Farley Dingle, not far from where Brookes collected it, on a species-rich road verge of MG5 *Festuca rubra* grassland; and it is found in open W8 *Fraxinus excelsior* woodland at Wynett Coppice. A good place to see it (although it is rare there) is on the cliffs at Lightspout Hollow, close to the waterfall.

### *Alchemilla filicaulis* Buser

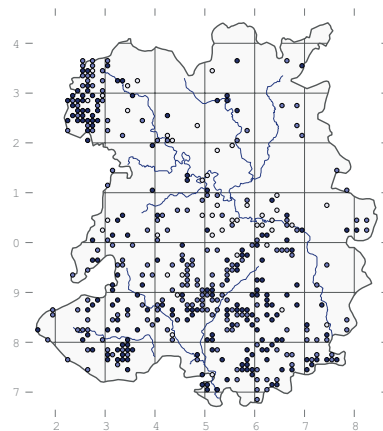
#### Common Lady's-mantle

Native. Local. Decreasing. Axiophyte: species-rich neutral and calcareous grassland.

First record: R. Gough, 1789, 'in mountainous meadows near Bishop's Castle.'

In many small meadows and pastures, particularly in the uplands. It is recorded in MG1e *Centaurea nigra* at Roman Bank and Ropewalk Meadow; MG5c *Danthonia decumbens* at Hayton's Bent (D.H. Wrench, 1995); and open W8 *Fraxinus excelsior* woodland on Llynclys Hill.

In the earlier Floras the only lady's-mantle recorded was *A. vulgaris* L., which we have interpreted as *A. filicaulis* unless there is a specimen that can be correctly determined. Plants in Shropshire are ssp. *vestita* M.E. Bradshaw.



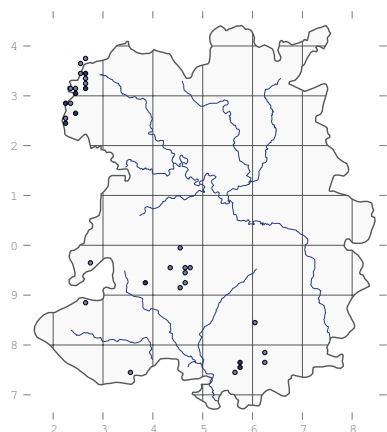
### *Alchemilla glabra* Neygenf.

#### Lady's-mantle

Native. Scarce. Decreasing. Axiophyte: grassland.

First record: M.B. Fuller, 1973, Marrington Dingle, SO273965.

In meadows on the hills, typically in MG5 *Festuca rubra* grassland, as at Trefonen Marshes. There are recent records of it at Bitterley (Perring, 1989), Oswestry Racecourse (J.H.S. Cox, 1991), Farden and Glyn Cottage (both G. Stone, 1996).



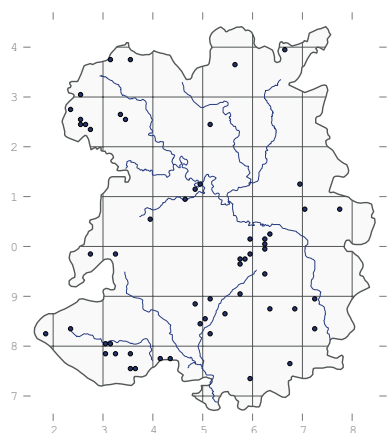
***Alchemilla mollis* (Buser) Rothm.**

**Garden Lady's-mantle**

Neophyte. Scattered. Increasing. Roadsides, waste ground and gardens.

First record: Perring (conf. S.M. Walters), 1988, Marrington Dingle.

A popular garden plant, often found naturalised on roadsides and in areas of waste ground such as old quarries where it has fairly obviously been dumped with garden waste or deliberately planted. Plants sometimes form large clumps but do not seem to spread by seed. It seems to have a vague affinity to calcareous grassland, and has been recorded often on Llynclys Hill, specifically in Upper Butcher's Quarry, which is a good place to look for it.



***Aphanes arvensis* L.**

**Parsley-piert**

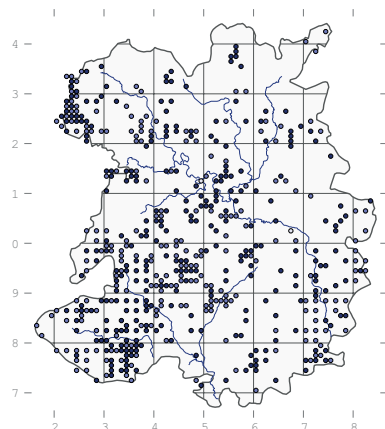
Native. Widespread. Stable. Arable fields, grassland.

First record: Williams, c. 1800, 'pastures and cornfields, common.'

Typical of arable fields and bare ground, in communities such as open CG3 *Bromopsis erecta* in Lea Quarry; OV10 *Senecio vulgaris* field margins at Welshampton; OV13 *Capsella bursa-pastoris* road verges at Priorslee; OV22 *Taraxacum officinale* waste ground

in Buildwas Sand Quarry (the last 3 by Trueman, 1981); and U1 *Rumex acetosella* grassland at Abbot's Castle Hill, Earl's Hill, the Long Mynd and Prees Heath.

In the past it was rarely distinguished from *A. australis*, and is therefore over-recorded for that species, especially in the hills.



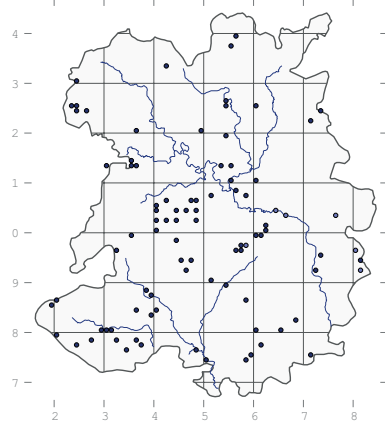
***Aphanes australis* Rydb.**

**Slender Parsley-piert**

Native. Local. Stable. Axioophyte: meadows, quarries and rock outcrops.

First record: W.P. Brookes, undated c.1830s, Gleedon Hill (det. Perring, SHY)

In grassland such as CG2 *Avenula pubescens* in an old quarry at Craig Sychtyn; CG3 *Bromopsis erecta* in Ballstone Quarry and on rock outcrops at Ippikin's Rock; CG7 *Thymus polytrichus* in Lilleshall Quarry and on rock outcrops on Moelydd; MG5 *Festuca rubra* at Moelydd and Oretton; OV22 *Taraxacum officinale* on Roman ruins at Viroconium; and – most notably – in U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005), Attingham Park, Earl's Hill, Lyth Hill, Haughmond Hill and the Long Mynd.



***Rosa multiflora* Thunb.**

**Many-flowered Rose**

Neophyte. Rare.

Well established in a hedge at Blackberry Bank, Church Aston (SJ734172, conf. R. Maskew, 2009, BIRM) and Pool Hall, Alveley.

***Rosa arvensis* Huds.**

**Field Rose**

Native. Widespread. Stable. Woods, hedges, scrub.

First record: Williams, c. 1800, 'hedges and woods, common.'

Despite its name, Field Rose is primarily a woodland edge plant, growing in a wide range of woodland types and also commonly in unkempt field hedges. It is recorded in W6 *Salix × fragilis* at Blake Mere; in many stands of W8 *Fraxinus excelsior* throughout; in W10 *Quercus robur* on Haughmond Hill and Hope Coppice; and W24 *Rubus fruticosus* hedges at Pentre Hodre. At Redhill it grows in neglected MG1 *Arrhenatherum elatius* grassland on a road verge. Although it is primarily a lowland plant, it has been found at 405 m on the Stiperstones (SO364974, A.K. Thorne, 2001) and 410 m on Titterstone Clee (SO5977, Thorne, 1999).



*Alchemilla glabra* (Dan Wrench)



*Rosa multiflora* at Church Aston



## *Rosa* × *irregularis* Déségl. & Guillon (*arvensis* × *canina*)

First record: A. Ley, 1909, Plowden, SO3987 (det. A.L. Primavesi, BM).

Recorded in a few scattered locations such as Llanymynech Hill, Church Stretton and Batchcott (all A.K. Thorne, 1997), Wattlesborough Heath (B.J. Laney, det. R. Maskew, 2008), and Medley Park (P.R. Green, 2009).

## *Rosa arvensis* × *tomentosa*

Forton Heath (SJ433177, A.K. Thorne, 1998, det. A.L. Primavesi).

## *Rosa arvensis* × *caesia*

Near Knighton (A.H. Wolley-Dod, 1894, det. A.L. Primavesi, LIV). The *R. caesia* was ssp. *vosagiaca*.

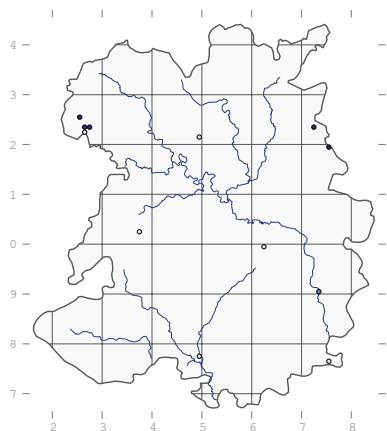
## *Rosa spinosissima* L.

### Burnet Rose

Native. Rare. Declining. Axiohyte: limestone grassland.

First record: A. Aikin, 1796, Llanymynech Hill.

On calcareous rock exposures and cliffs. It grows at Blodwel Rock (R.A. Dawes, 1999) and in a small paddock at Bryn Celyn, near Treflach, where it is found in scrub at the top of a field of MG5 *Festuca rubra* grassland. There are several other old sites for it, including Snailbeach (Williams, 1800), Ludlow Racecourse (M. McGhie, 1841), Shotton Hall (W.W. Watkins, 1841), the Wyre Forest (G. Jordan, 1856) and Quatford (G.C. Druce, 1911). B.R. Fowler found it on a roadside wall at Pickstock in 1976, where it was presumably an introduction, as was the plant that T. MacLean recorded at Newport in 1981 and 1986.



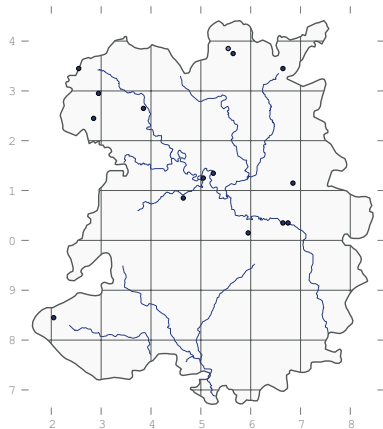
## *Rosa rugosa* Thunb.

### Japanese Rose

Neophyte. Scattered. Increasing. Gardens and waste ground.

First record: Sinker, 1970, Prees Heath.

Frequently grown in gardens and as part of amenity planting schemes, occasionally becoming established elsewhere, such as Oswestry Railway Station (M.E. Roberts, 1992 – 1996) and in cracks in concrete in an old council works depot at Underdale, Shrewsbury. Although it is not native, it is included as a component in some conservation planting schemes, as in a new hedge at Crose Mere.



## *Rosa ferruginea* Vill.

### Red-leaved Rose

Naturalised at Coton Hill railway sidings (R.M. Stokes, 2005, BIRM).

## *Rosa canina* L.

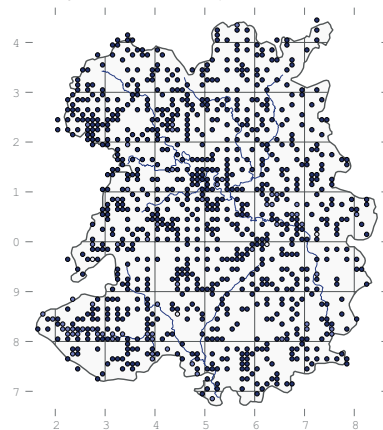
### Dog Rose

Native. Widespread. Stable. Hedges, scrub, woodland and swamps.

First record: Williams, c. 1800, 'hedges, common.'

Frequent in hedges and scrubby grassland in places like Merrington Green (J.H. Chandler & G.G. Graham, 1975), Pattens Rock Quarry (A.K. & W.I.J. Thorne, 2001) and Windmill Hill. Vegetation surveyors rarely identify roses to species owing to the difficulty of finding suitable specimens, but *R. canina sens. lat.* has been recorded in CG2 *Avenula pubescens* at Blackbridge Quarry; CG3 *Bromopsis erecta* in Lea Quarry; S18 *Carex otrubae* at the Speller; S26 *Phragmites australis* at Cole Mere and in the Shrewsbury Canal at Wappenshall; W5 *Alnus glutinosa* at Marton Pool, Chirbury and Top Pool, Berrington; W6 *Salix* × *fragilis* at Brown Moss; and both W8 *Fraxinus excelsior* and

W21 *Crataegus monogyna* hedges throughout the county.



## *Rosa* × *dumalis* Bechst. (*caesia* × *canina*)

Native. Widespread. Stable. Hedges and scrub.

First record: Leighton, 1836, Shrewsbury (det. A.L. Primavesi, CGE).

A common hybrid, but rarely recorded. There are recent records of it at Cold Hill, Earl's Hill, Llanymynech Hill, Pulverbatch, Shelve Pool, Stapleton, Pickstock (all Thorne, 1997-8, conf. A.L. Primavesi) and by the Shropshire Union Canal at Hawksmoor (J.H. Clarke, 1997, conf. Primavesi).

## *Rosa* × *dumetorum* Thuill. (*canina* × *obtusifolia*)

First record: A. Ley, 1909, Church Stretton (det. A.L. Primavesi, BM).

Occasional in hedges and scrub. There are recent records from Farlow (R. Maskew, 1992), a hedge at Betton Pool, Blakeway Hollow, Aychley Farm and Lower Wigmore (all A.K. Thorne, 1997-98, conf. Primavesi).

## *Rosa* × *scabriuscula* Sm. (*canina* × *tomentosa*)

First record: A.H. Wolley-Dod, 1899, Panponton Hill (det. A.L. Primavesi, CGE).

Occasional in hedges and scrub. There are recent records from Chelmarsh, Dolgoch Quarry, Granville Country Park, Llanymynech Hill, Merrington Green, Norbury, Pitchford and Westbury (all A.K. Thorne, 1997-2001, conf. Primavesi).

## *Rosa* × *rothschildii* Druce (*canina* × *sherardii*)

Occasional in hedges, woodland edges and scrub. Not recorded in the county until 1997, when A.K. Thorne collected it in 14 places.

***Rosa × molletorum* Hesl.-Harr. (*canina* × *mollis*)**

Occasional in hedges and scrub. First recorded by M.E. Roberts (1995, det. A.L. Primavesi) near Oswestry Racecourse, and subsequently in several locations in the south of the county by A.K. Thorne (conf. Primavesi).

***Rosa × toddiae* Wolley-Dod (*canina* × *micrantha*)**

One bush in a hedge east of Church Pulverbatch (Thorne, 1998) and one on the old railway line at Benthall Edge (A.K. Thorne, 2001, both conf. A.L. Primavesi).

***Rosa caesia* Fr.**

**Hairy Dog-rose**

First record: W.M. Rogers, 1886, Church Stretton (det. A.L. Primavesi, BM).

In hedges, scrub and woodland edges. There are recent records from Cold Hill, Earl's Hill, Kinnerton, Smethcott, Wentnor and elsewhere (all A.K. Thorne, 1997-2005, conf. Primavesi & R. Maskew). The subspecies *vosagiaca* (N.H.F. Desp.) D.H. Kent (Glaucous Dog-rose), is more widespread than ssp. *caesia* (Hairy Dog-rose), but both tend to cluster in the south of the county and they are sometimes both recorded in the same site, e.g. Haughmond Hill (J.H. Chandler & G.G. Graham, 1975) and the Knolls (Thorne, conf. Primavesi, 2002).

***Rosa caesia* Sm. × *sherardii* Davies**

On the Stiperstones near Gatten plantation (SJ371981, A.K. Thorne, 2002, det. A.L. Primavesi) and at Benthall Hall (SJ6702, P.D. Stanley, 2005, det. R. Maskew).

***Rosa × glaucoides* Wolley-Dod (*caesia* × *mollis*)**

Three bushes in a roadside hedge near Blakeridge Wood (SO295866, A.K. Thorne, 1997, det. A.L. Primavesi).

***Rosa obtusifolia* Desv.**

**Round-leaved Dog-rose**

The only confirmed record (originally as *R. tomentella*) was by W.H. Painter at Sutton Maddock in 1894 (det. A.L. Primavesi, BM, LIV, NOT).

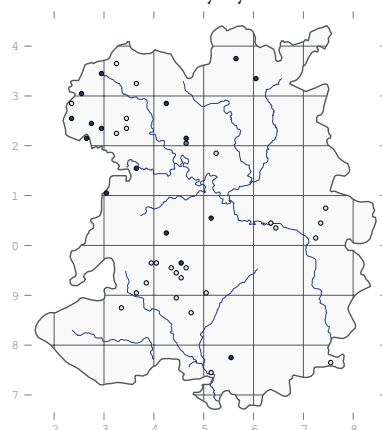
***Rosa tomentosa* Sm.**

**Harsh Downy-rose**

Native. Widespread. Stable. Hedges and scrub.

First record: Williams, 1800, 'woods and hedges, common.'

Common on the limestone around Oswestry but also on more acid soils elsewhere. Sinker considered many of the early records to be uncertain, owing to taxonomic changes, but recent recording has shown that the species is indeed quite common. Specimens from the following sites (mostly collected by A.K. Thorne) have been confirmed by A.L. Primavesi: Merrington Green, Bitterley, Dolgoch, Smethcott, Condoover, Aychley Farm, Stanwardine in the Wood, Alberbury, Crickheath and Llanymynech Rocks.

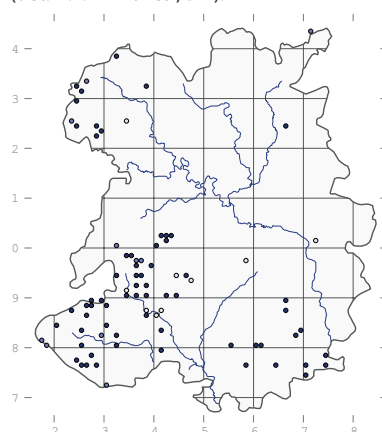


***Rosa sherardii* Davies**

**Sherard's Downy-rose**

Native. Local. Stable. Hedges and woodland edges.

First record: Leighton, 1833, West Felton (det. A.L. Primavesi, BM).



This is an upland species, reaching the lower limit of its distribution in Shropshire. It is mostly found in hedges and occasionally on the edges of woods – for example at Millhay Wood (SJ716430, B.R. Fowler, 1976, det. I.M. Vaughan). Although it is only

frequent in the hills, it does occur in lowland situations: A.K. Thorne found it at 80 m above sea level at Child's Ercall (SJ669247, 1998, det. A.L. Primavesi). It is now known to be more frequent in the Clun Forest, Stiperstones area, Oswestry Uplands and Clee Hills than was shown in Sinker's Flora. Although Leighton's specimen is credited as the first county record, the first published records were by A. Ley (as *Rosa omissa*) at Carding Mill Valley and other sites in South Shropshire in 1909 (*Record of Bare Facts* 19, 1910).

***Rosa × perthensis* Wolley-Dod (*mollis* × *sherardii*)**

One plant on the edge of a track at the Bog, SO355989 (A.K. Thorne, 1997, conf. A.L. Primavesi), with both parents.

***Rosa × suberecta* (J. Woods)**

**Ley (*rubiginosa* × *sherardii*)**

Recorded by A. Ley (as *R. suberecta* Ley) once, at Ratlinghope, in 1909. It has been recorded as far south as South Lancashire and Leicestershire (Graham & Primavesi 1993), so this is not impossible.

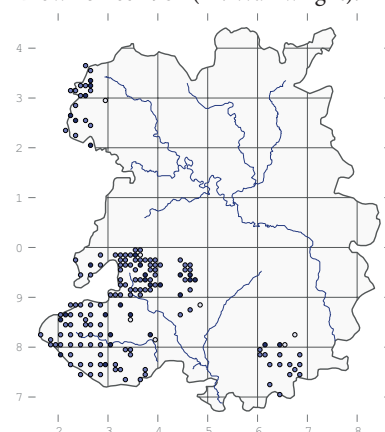
***Rosa mollis* Sm**

**Soft Downy-rose**

Native. Local. Stable. Hedges

First record: Leighton, 1841, Sharpstones Hill (SHY).

Occasional in the Clun Forest, Stiperstones, Clee Hills and Oswestry district. A.K. Thorne considers its lowest limit in Shropshire to be in hedges at Oswestry Racecourse (SJ257306) at 310 m, where it has been known since 1982 (M. Wainwright).



### *Rosa rubiginosa* L.

#### Sweet Briar

Native. Local. Stable. Hedges and scrub.

First record: Williams, c. 1800, 'woods and hedges, common.'

Occasional on base-rich soils. There are recent records for Burcotgate (S. O'Donnell, 2003), SJ23W and SJ33B (A.K. Thorne, 2006) and Albrighton (O'Donnell, 2011).

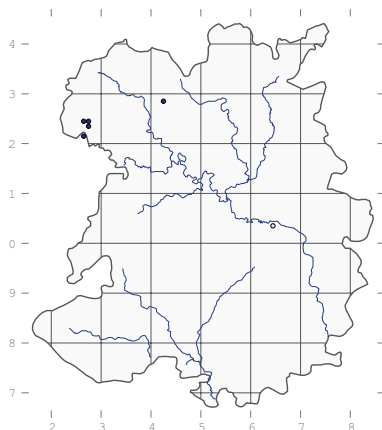
### *Rosa micrantha* Borrer ex Smith

#### Small-flowered Sweet-briar

Native. Scarce. Stable. Axiophyte: grassland and scrub.

First record: G. Potts, 1903, Tickwood.

Occasional on the more base-rich soils, notably on Llynclys and Llanymynech hills, where it has been known since 1979 (E.D. Pugh) and it is still fairly abundant (A.K. Thorne, conf. A.L. Primavesi, 1997) and at nearby Dolgoch Quarry (Thorne, conf. Primavesi, 1997). The only other place in the county where it has been recorded recently is Stanwardine in the Wood, where it was found by P. Parker in 1998 (det. Primavesi). Potts's early record is not supported by a voucher specimen so could be considered unconfirmed, and an even earlier one by G.H. Griffiths at Little Stretton in c. 1870 seems dubious.



[*Rosa agrestis* Savi, Small-leaved Sweet-briar]

Listed by Lloyd & Rutter (1957) for Botanical Division VIII. Best considered unconfirmed unless details emerge.]

### *Rosa × cottetii* (H. Christ) Lager & Puget ex Cottet (*caesia* ssp. *vosagiaca* × *tomentosa*)

Just one record: at Norbury (SO373938, A.K. Thorne, 1999, det. A.L. Primavesi).

### *Stephanandra tanakae*

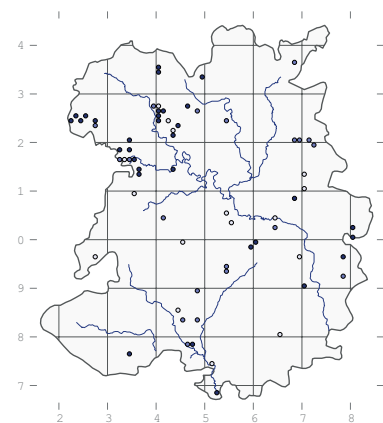
Frank. & Sav.

#### Stephanandra

Neophyte. Rare.

Planted on Ketley Pitmounds (P.S. Gateley, 2003).

Shropshire and rather randomly scattered. It often occurs in hedges, mainly on calcareous soils, or in disused limestone quarries such as Lea Quarry and Dolgoch Quarry. A different habitat for it is in peaty fens or wet woodlands along rivers, as at Grange Farm, Edgerley, or the Yesters (Beckwith, 1889 and I. Diack, 2006). Sometimes it is planted in conservation schemes, as seems to be the case at the Mere at Ellesmere and at Prees Branch Canal. A good place to look for it is along Blakeway Hollow, where it was recently found by R.M. Stokes in 1998 but was probably first spotted by G. Potts in 1924 ('summit of Wenlock Edge near Much Wenlock').



### *Frangula alnus* Miller

#### Alder Buckthorn

Native. Local. Stable. Axiophyte: woods, heaths and mires.

First records (as *Rhamnus frangula*): Williams, c. 1800, 'by side of Shomere pool; Cound Moor; a piece of ground called Mosterley adjoining Cound Moor; wood called Colon's Rough near Sundorn; copse at south end of the Wrekin.'

A shrub or small tree that seems to be most typical of W4 *Betula pubescens* woods on drying peat bogs such as Wem Moss, Whixall Moss or Shomere Pool. It is also sometimes found in W5 *Alnus glutinosa* woodland, as at Crose Mere (M.J. Wigginton, 1979) and Shomere, and once it was recorded in S27 *Comarum palustre* at Shomere Pool (Wigginton, 1979). It also occurs on some heaths and other heathy woods including Prees Heath (S. Lewis, 2006), Shawbury Heath, and parts of the Wyre Forest (first noted by E. Lees in c. 1841). Very occasionally it is found in calcareous woods, as on Llynclys Hill (first recorded by J. Hignett in 1930), where it could be bird-sown or deliberately planted.



*Frangula alnus* fruits



*Quercus petraea* acorns

## Elaeagnaceae

### *Hippophae rhamnoides* L.

#### Sea-buckthorn

Native on the coast in Britain but planted along an old railway line in Oswestry (SJ303304, S. Barrett, 1983).

### *Elaeagnus pungens* var. *maculata* Thunb.

#### Variegated Eleagnus

Neophyte. Rare.

Planted on old pitmounds in Ketley (P.S. Gateley, 2003).

## Rhamnaceae

### *Rhamnus cathartica* L.

#### Buckthorn

Native. Scattered. Stable. Hedges, quarries and wet woods.

First record: Withering, 1787, 'in Shropshire, frequent.'

A native shrub in lowland England, being on the edge of its range in



## Ulmaceae

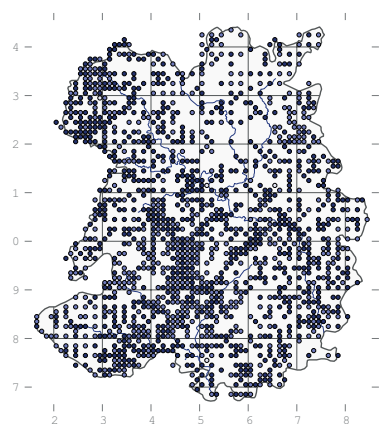
### *Ulmus glabra* Hudson

#### Wych Elm

Native. Frequent. Stable. Woods and hedges.

First record: Williams, c. 1800, 'woods and hedges.'

A common shrub in hedges and woodland edges, sometimes forming a component of the canopy in deciduous woods. It is mainly a plant of slightly calcareous W8 *Fraxinus excelsior* woods, but it is also found in more acid W10 *Quercus robur* woods, for example at Cole Mere, and W21 *Crataegus monogyna* scrub on Earl's Hill. In many places it is characteristic of the W8d *Hedera helix* subcommunity, where ivy has thrived in the higher light levels created by the death of the larger elms since the outbreak of Dutch Elm Disease in the 1970s. Many trees regrow, but even now large specimens are uncommon. In hedges it seems almost unaffected.



### *Ulmus × elegantissima* Horw. (*glabra* × *plotii*)

Native. Rare. Decreasing. Hedges.

Just two records: at Shotatton (R. Melville & H.K. Airy Shaw, 1939, K) and on a field margin at Rudge (SO802979, B.R. Fowler, conf. R. Melville, 1977).

### *Ulmus × vegeta* (Loudon) Ley (*glabra* × *minor*)

#### Huntingdon Elm

Native. Rare. Stable. Parks and gardens.

First record: B.R. Fowler (det. R. Melville), 1977, Woore.

Possibly not uncommon, and identification of good specimens seems fairly straightforward, but confirmation of records is difficult. There are unconfirmed records of it at Chelmarsh Reservoir (A.K. Thorne,

2000), on the southern slopes of Earl's Hill (2002, BIRM), on Bridgnorth Golf Course (D.H. Wrench, 2002, BIRM) and at Clun, probably as a planted tree in all cases.

### *Ulmus × hollandica* Miller (*U. glabra* × *minor* × *plotii*)

#### Dutch Elm

Native. Rare. Stable. Roadsides and parks.

First record: P. Parker, 1998, Weston Lullingfields (det. R. Melville).

A native hybrid tree that is often planted in parks and gardens, almost certainly under-recorded. It grows below Shrewsbury Castle, in Attingham Park, and in hedges at Weston Lullingfields and Crudgington.

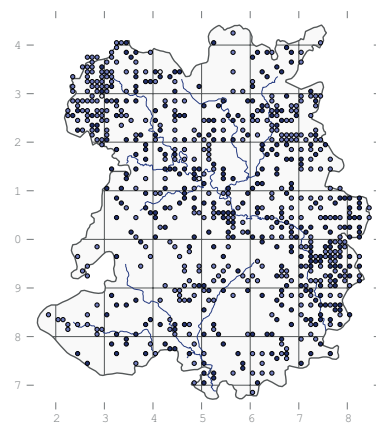
### *Ulmus procera* Salisb.

#### English Elm

Archaeophyte. Widespread. Stable. Axiophyte: woods & hedges.

First record: Williams (as *U. campestris*), c. 1800, 'hedges, common.'

Typical of the more species-rich hedges and woods. It suckers prolifically, and is recorded in MG1 *Arrhenatherum elatius* grassland by the Llangollen Canal at Welshampton; W6 *Salix × fragilis* woodland at Blake Mere and the Dell, Sundorne; and W8 *Fraxinus excelsior* woodland at Craig Sychtyn. On Haughmond Hill there are many small, stunted shrubs in conifer plantations that are best described as W10 *Quercus robur* woodland. English Elm has been hit hard by Dutch Elm Disease, and large trees are probably completely absent, although they were once very common. Gregory (1824) described Oteley Park near Ellesmere as 'having probably the greatest quantity of elm trees to be seen in any part of England.'



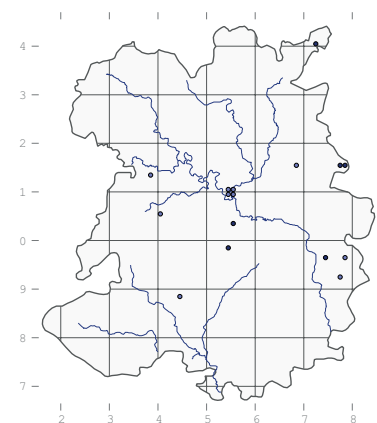
### *Ulmus minor* Mill.

#### Small-leaved Elm

Native. Scattered. Decreasing. Hedges.

First record: Leighton, 1841, 'in hedges.'

The treatment of this species has varied in the different Floras. Leighton (1841) recognised it as *U. campestris*, but Sinker (1985) lumped it with *U. plotii*. It has probably been devastated by Dutch Elm Disease and it is difficult to identify shrubs that may have survived. Perring (1975) found pendulous and golden varieties at Attingham Park, and considered them all to be planted. Recent records are from the eastern side of the county, around Lynn and Woodcote, where it is frequent in hedges.



### *Ulmus × viminalis* Lodd. ex Loudon (*U. minor* × *plotii*)

Planted. Rare. Stable. Hedges.

In 1994 R.A. & A.P. Dawes collected a specimen of this hybrid (det. P.J. Bourne) from a hedge at Tan-y-graig (SJ218258) and reported that it was still there in 2006.

### *Ulmus plotii* Druce

#### Plot's Elm

Native. Rare. Declining or extinct. Hedges.

First record: G.C. Druce, 1921, Shrewsbury.

There is very little information about this rare tree. After Druce found it in Shrewsbury in 1921, W.T. Stearn collected specimens at Shawbury and Lee Brockhurst in 1942 (det. R. Melville, K).

This species is very susceptible to Dutch Elm Disease and it is unlikely that there are any well-grown specimens to be found in the county.

## Cannabinaceae

### *Cannabis sativa* L.

#### Hemp

Casual. Rare. Waste ground.

First record: A.W. Weyman, 1906, Ludlow.

A rare casual, probably from bird seed. It was found in a quarry on Llynclys Hill by A.K. Thorne in 2006, in a field of sown grassland at Venus Pool reserve by R.M. Stokes in 2007, and on the bank of the Severn by Pig Trough, Shrewsbury, by R. Maycock and C.R. Boon in 2007.

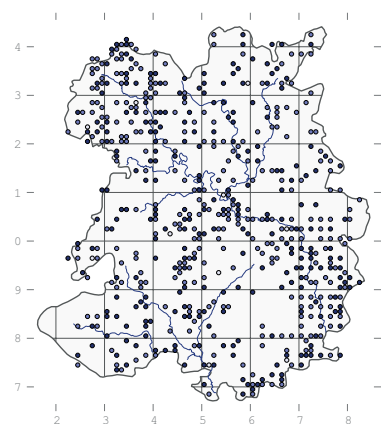
### *Humulus lupulus* L.

#### Hop

Native. Widespread. Stable or increasing. Hedges.

First record: Leighton, 1841, 'hedges, frequent, apparently wild.'

Common in hedges, particularly near houses. Opinions differ about whether it is really native or not; many plants are clearly garden escapes, but it also turns up in hedges and fenced woodland edges at a distance from any current habitation. Sinker (1985) considered it mainly a plant of the Severn valley but it is now recorded more widely throughout the county. A good place to find it is Hopesay, where it has been recorded many times since 1927 (H.S.T. Richardson).



## Moraceae

### *Morus nigra* L.

#### Black Mulberry

Neophyte. Rare.

A rare planted tree, fully hardy in this county but rarely encountered in the wild. K.K. Bell reported that there is one on The Burgs at Bayston Hill, SJ486087, August 2009.

### *Ficus carica* L.

#### Fig

Neophyte. Casual. Increasing. Gardens.

Not uncommon as a garden tree, but very rare in the wild. A small self-sown tree grows on a wall along the roadside outside Oteley Hall near Ellesmere. In such a location it gets cut down, but it grows up again, and it seems quite an old tree. A shrub in a roadside planting in Frankwell has been spreading in recent years.

## Urticaceae

### *Urtica dioica* L.

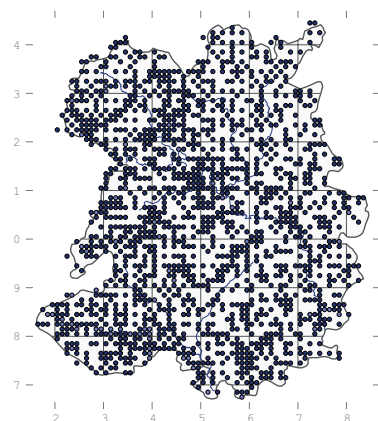
#### Stinging Nettle

Native. Widespread. Stable or increasing. Woods, riverbanks, fields and waste ground.

First record: Williams, c. 1800 'gardens and on rubbish, common.'

One of the commonest plants in the county, present in every tetrad and probably every monad, although it is absent from open mires if they are in good condition and from any truly aquatic habitat. It is recorded in a wide variety of communities and is dominant in three – OV24 *U. dioica* and OV25 *Cirsium arvense* ruderal vegetation, both of which are widespread, and W6 *Salix x fragilis* woodland, which is common along rivers. It is often present in damp woods in small quantities, and in disturbed and enriched places elsewhere.

*Urtica dioica* ssp. *galeopsifolia* (Wierzb. ex Opiz) Chrték, Fen Nettle, is much less common. It occurs in open woodland by streams and rivers in less eutrophic conditions, and has been recorded by the Rea Brook at Cruckmeole (SJ429095, D.H. Wrench, 2003), by the Tern at Attingham Park (SJ553095, 2005), in Benthall Edge Wood (SJ669034, M.F. Godfrey, 2006) and similar places.



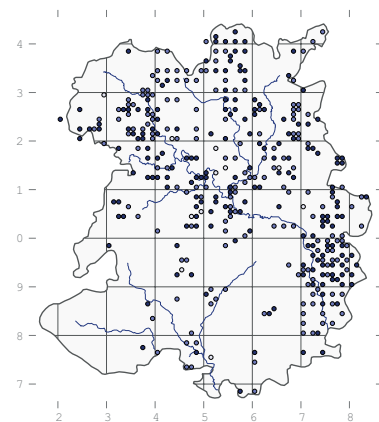
### *Urtica urens* L.

#### Small Nettle

Native. Widespread. Stable. Arable fields, gardens.

First record: Williams, c. 1800, 'gardens, common.'

A common annual weed of arable fields and gardens on the plain, less so in the uplands of the south and west. It is most often found in OV14 *U. urens* community in arable fields in places like Edgmond, Rudge Heath (both Trueman, 1981) and the Sands farm, but is also recorded in OV13 *Capsella bursa-pastoris* on a road verge at Priorslee and OV18 *Polygonum aviculare* in a field at Edgmond (both Trueman, 1981). Sinker (1985) describes it as a plant of poorly drained clay soils, but it is just as likely to be found in sandy, dry places. A good place to see it is at Prees Heath, where it grows in field margins and on disturbed soils.



### *Urtica pilulifera* L.

#### Roman Nettle

Only one record: in a garden at Eaton Mascott (Williams, ca. 1800).

### *Parietaria judaica* L.

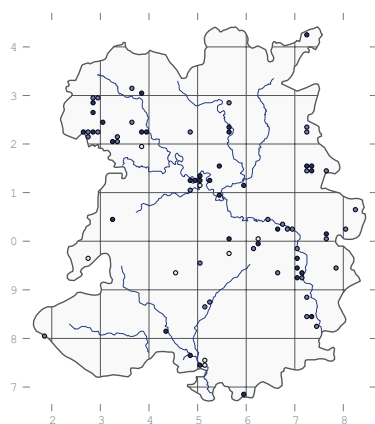
#### Pellitory-of-the-Wall

Native. Local. Stable or increasing. Walls and roadsides.

First record: Williams, ca. 1800, 'old walls.'

Typical of old walls, often on ruined churches, abbeys and castles, but also on dry earth banks, gravel paths and towpaths along rivers. A good place to see it is the village of Worthen, where it was first recorded by J.B. Johnson in 1939, and is now remarkably frequent. Another reliable site is along St Mary's Water Lane in Shrewsbury, where Leighton first recorded it in 1841. Rodwell (2000) gives *P. judaica* (as *P. diffusa*) its own NVC community, OV41, to describe its habitat on walls

or natural rock ledges, which he considered distinct from the OV42 *Cymbalaria muralis* community. However, the two species often grow together.



### *Soleirolia soleirolii* (Req.)

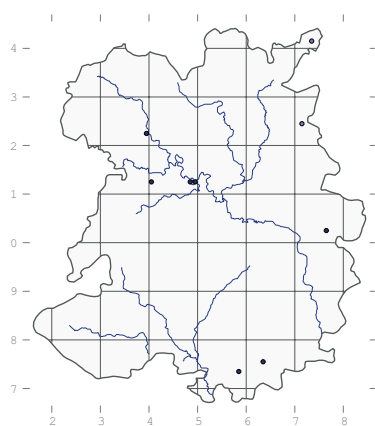
Dandy

### Mind-your-own-business

Neophyte. Scarce. Increasing. Buildings and pavements.

First record: B.R. Fowler, 1979, Sambrook, 'on moist roadside rocks.'

A garden plant that occasionally becomes established on shady, damp pavements close to gardens. It is probably more common than the records show, as obvious garden escapes tend to get ignored. There is no evidence of it spreading into any semi-natural habitat.



## Nothofagaceae

### *Nothofagus obliqua* (Mirb.)

Blume

Roble

Neophyte. Scattered. Increasing. Plantations and hedges.

Occasionally grown in forestry plantations, as at Blodwel Rock, Nesscliffe Hill (A.K. Thorne, 2005), Pimhill (D.H. Wrench, 2004) and in a hedge at Mow Cop.

### *Nothofagus alpina* (Poepp. & Endl.) Oerst.

Rauli

Neophyte. Rare. Increasing. Plantations.

A planted tree, grown in a few places and recorded at Nesscliffe Hill (A.K. Thorne, 2005) and Haughmond Hill. In the latter site there was just one specimen apparently randomly planted in an extensive area of conifers.

## Fagaceae

### *Fagus sylvatica* L.

Beech

Native. Widespread. Stable or increasing. Woods, gardens, parks.

First record: Williams, c. 1800, 'woods and hedges.'

Frequently planted in woods, where it reproduces successfully by seed. In some plantations it is dominant, but whether there are any actual beech woods in Shropshire is a moot point. It has been recorded in W6 *Salix × fragilis* by the Borle Brook at Defford, at Marton Pool, Chirbury (M.J. Wigginton, 1979), and at Brown Moss; W8 *Fraxinus excelsior* in many places, including Blakeway Coppice, Haughmond Hill and Sodylt Wood; W10 *Quercus robur* at Prees Heath, Stanway Coppice and Hope Coppice; W16 *Q. petraea* at Oaks Wood and Sowdley Wood; W17 *Leucobryum glaucum* at Oaks Wood; and W24 *Rubus fruticosus* scrub at High Rock, Bridgnorth (Trueman, 1981). The varieties 'Dawyck', 'heterophylla', and 'purpurea' have been recorded as specimen trees on roadsides and parks in the county.



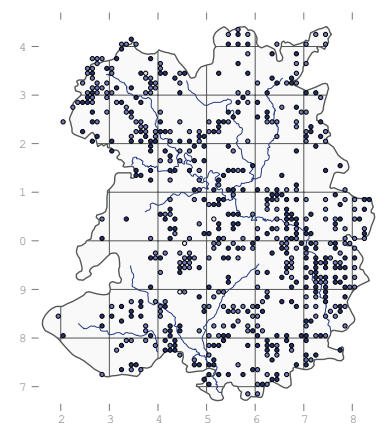
### *Castanea sativa* Miller

Sweet Chestnut

Archaeophyte. Widespread. Increasing. Woods and parks.

First record: Williams, c. 1800, Hardwick and Pitchford.

An ancient introduction, now widely planted in country estates, amenity woodland and occasionally as a timber crop. Seedlings do occur, but it does not seem to spread naturally, and it increases mainly by planting. It is tolerant of a range of soil types, but is normally found in W8 *Fraxinus excelsior* woods, as at Stoke Wood and Bomere Pool, or W10 *Quercus robur*, as at the Mere at Ellesmere.



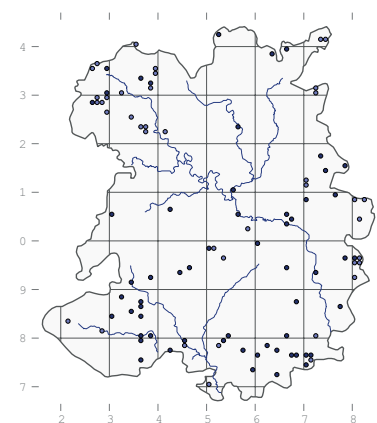
### *Quercus cerris* L.

Turkey Oak

Neophyte. Scattered. Increasing. Parks, woods, estates.

First record: Perring, 1972, Attingham Park.

Widely planted in woods such as Blakeway Coppice and as specimen trees in estates such as Quinta Park (M.E. Roberts, 1980) and Cound Hall.





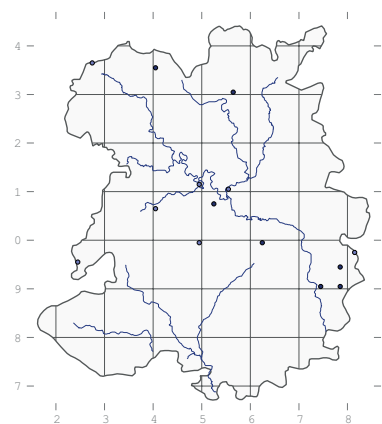
## *Quercus ilex* L.

### Holm Oak

Neophyte. Scarce. Increasing. Gardens, parks and churchyards.

First record: Perring, 1972, Attingham Park.

Widely planted in Britain and well naturalised in southern England, becoming invasive in some habitats. That has not happened yet in Shropshire, where it is only recorded as a specimen tree in a few parks and gardens.



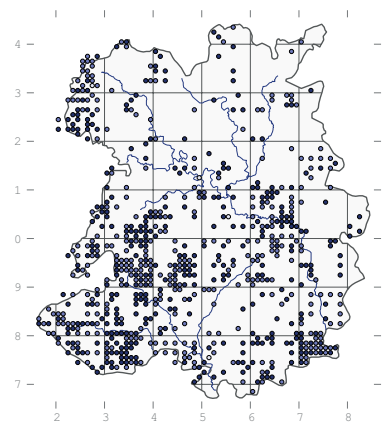
## *Quercus petraea* (Mattuschka) Liebl.

### Sessile Oak

Native. Widespread. Stable. Upland woods.

First record: C.C. Babington, Leighton & J.F.M. Dovaston, 1834, Nesscliffe Hill.

Characteristic of W16 *Q. petraea* woods in places like the Ercall, Oaks Wood, Poles Coppice, Sowdley Wood and Withybed Wood, and W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood and a few other upland locations. It is, however, also quite common in W8 *Fraxinus excelsior* in places like Craig Sychtyn (R.A. Dawes, 2000) and Limekiln Wood; W10 *Q. robur* at Hope Coppice, Snailbeach Coppice and Stanway Coppice. Seedlings and saplings are sometimes recorded in acid grassland and heath, such as M15 *Trichophorum germanicum* at Cramer Gutter.



## *Quercus × rosacea* Bechst.

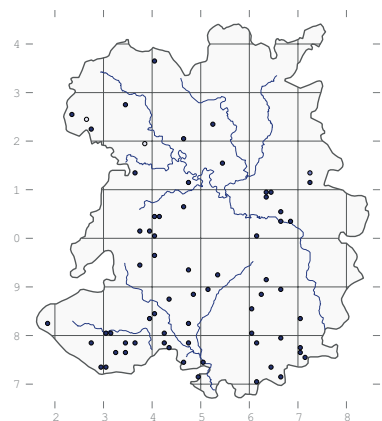
(*Q. petraea* × *robur*)

### Hybrid Oak

Native. Local. Stable. Woods, hedges and parks.

First record: Leighton (conf. D. Don & R. Graham), 1841, 'on the western summit and base of Nesscliffe Hill in considerable masses, decidedly wild.'

Because this is a fertile hybrid that back-crosses with the parents, it is often very difficult to be confident about identification of either the hybrid or of the species. Sometimes clearly intermediate plants occur, and these are what tend to be recorded as *Q. × rosacea*. Leighton concluded that some of the trees on Nesscliffe Hill were the hybrid, but one of his specimens, at SHY, dated 1834, was described by E.M. Rutter as *Q. petraea*. If that record is incorrect, the next one appears to be as late as 1977, when Packham recorded it on The Ercall. In 1978 R.A.D. Cameron listed it for Oaks Wood. Since then it has been recorded more widely, not usually in woods, but more often as individual standards along hedgerows and in patches of open wood such as at the southern end of Earl's Hill. J. Bingham considers that many of the trees in the Wyre Forest are hybrid oaks.



## *Quercus robur* L.

### Pedunculate Oak

Native. Widespread. Stable. Woods, hedges, heaths.

First record: Williams, c. 1800, 'woods and hedges.'

This is the dominant tree in the natural climax community over most of the lowland parts of the county. It is recorded in many woodland types, including W1 *Salix cinerea* at Shomere Pool and the Mere; W4 *Betula pubescens* at Calcott Moss, Lin Can Moss, Haughmond Hill and elsewhere; W5 *Alnus glutinosa* at Haughmond

Abbey, Oxon Pool, Shrawardine Pool and many other sites; W6 *Salix × fragilis* (where it is often the dominant species) on drying peatlands around many of the meres; in all W8 *Fraxinus excelsior* woods; W9 *Sorbus aucuparia* in Betchcott Hollow; in all stands of W10 *Q. robur* woodland, hedges and scrub; W21 *Crataegus monogyna* on Earl's Hill; W23 *Ulex europaeus* scrub at Old Oswestry; and W24 *Rubus fruticosus* hedgebanks at Mellin-y-Groque, Nobold and Pentre Hodre.

Elsewhere it often springs up in other communities such as CG2 *Avenula pubescens* in Dolgoch Quarry; CG3 *Bromopsis erecta* in Lea Quarry; MG1 *Arrhenatherum elatius* at the Speller; MG5 *Festuca rubra* at Cleve St Margaret and Rushbury (both D.H. Wrench, 1994-5); MG6 *Cynosurus cristatus* in Becks Field; M25 *Molinia caerulea* at Steel Heath; OV37 *Festuca ovina* at Snailbeach (Trueman, 1981); S26 *Phragmites australis* at Black Coppice; S27 *Comarum palustre* at Bomere Pool (M.J. Wigginton, 1979) and U1 *Rumex acetosella* on Earl's Hill.



## *Quercus rubra* L.

### Red Oak

Neophyte. Scattered. Increasing. Parks, roadsides.

First record: Perring, 1969, Attingham Park, 'planted in woodland, but regeneration by seedlings observed.'

## Myricaceae

### *Myrica gale* L.

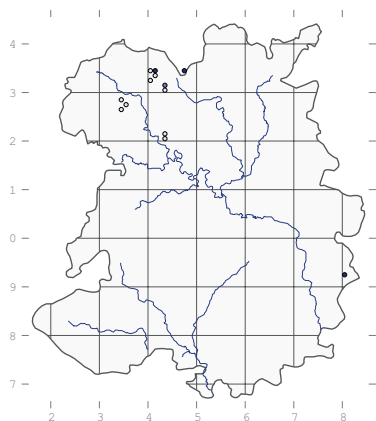
#### Bog Myrtle

Native. Rare. Decreasing. Axiophyte: peat bogs.

First record: R.H. Waring, 1770, 'near the Decoy, between Oswestry and Babin's-wood.'

There are just three recent sites: at Millmoors (SO809929, B.R. Fowler, 1986), Blake Mere (SJ418341, C. Walker, 1991) and Wem Moss, where

it is abundant and has been seen many times since it was first recorded by E.A. Wilson in 1950. It has gone from a number of other mosses, including Crose Mere (W.E. Beckwith, 1880), the Mere at Ellesmere (A. Bloxam, 1841 – W. Beacall, 1891) and Whattall Moss (Sinker, 1958).



## Juglandaceae

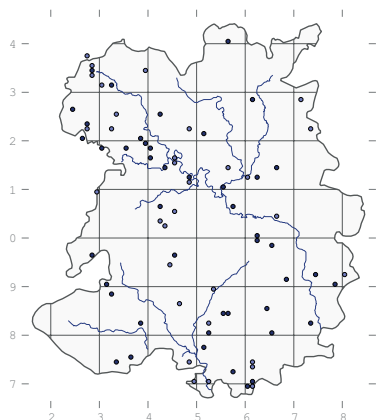
### *Juglans regia* L.

#### Walnut

Planted. Scattered. Increasing. Hedgerows and country estates.

First record: J.C. Melvill, 1926, Carding Mill Valley.

Sinker (1985) considered walnut to be naturalised in some places and to reproduce successfully by seed, but we have never encountered any saplings. Most of the recorded trees are individuals in hedges close to gardens; some are mature trees in fields where hedges have been removed. A few people have recorded it when obviously planted in gardens and orchards. It is not apparent whether it is increasing or whether people are just recording it more. A good place to see it is at Attingham Park, where it was first recorded by Perring in 1972.



## Betulaceae

### *Betula pendula* Roth

#### Silver Birch

Native. Widespread. Stable. Woods, hedges, scrub, bogs and heaths.

First record (as *Betula alba*): Williams, c. 1800, 'woods and hedges'.

A colonist of bare ground and open grassland and a characteristic component of several types of woodland. It appears to be quite interchangeable with *B. pubescens*, although the latter tends to be found slightly more on acid, peaty soils and *pendula* is more common on dry, calcareous or neutral soils. It is recorded in CG2 *Avenula pubescens* in Pattens Rock Quarry (Trueman, 1981) and on M2 *Sphagnum fallax* on Lin Can Moss. At Cramer Gutter it colonises M15 *Trichophorum germanicum* and it does the same in M16 *Sphagnum compactum* at Hodnet Heath. Its main habitat is in woodland, though, and it is found in W1 *Salix cinerea* at Shomere Pool; W4 *Betula pubescens* at Bomere Pool, Haughmond Hill, Lin Can Moss and elsewhere; W5 *Alnus glutinosa* at Haughmond Abbey and Sweat Mere; W6 *Salix × fragilis* at Cole Mere and Shrawadine Pool; W7 *Lysimachia nemorum* at Brook Vessons and Fastings Coppice; W8 *Fraxinus excelsior* and W10 *Quercus robur* in many places. It is particularly important in W16 *Q. petraea* woodland in places like Clarepool Moss and Oaks Wood and W17 *Leucobryum glaucum* at Oaks Wood. It is not limited by altitude in the county, being found above 400 m in several places on the Stiperstones.

*Betula × aurata* Borkh. (*B. pendula* × *pubescens*)

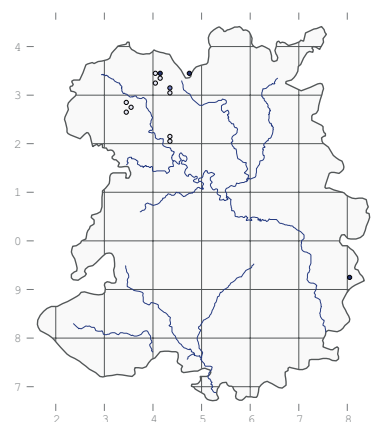
#### Hybrid Birch

Native. Widespread. Stable. Woods, mires, quarries.

First record: Perring, 1989, Cramer Gutter.

A difficult hybrid to identify reliably, as the parents are so variable and there is no reliable feature by which individual plants can be positively separated from the species (statistical analyses of populations or genetic analysis might be more applicable). However, a few people have made note of clearly intermediate plants, and they may well be correct. It seems likely that the hybrid is common. Perring recorded it in two very different habits: the acid heathland of Cramer Gutter reserve, and the limestone quarry at Craig

Sychtyn (in 1993). M.A. Bodley & A. Cole studied plants at Wem Moss in 1999 and concluded that it occurred there as well.



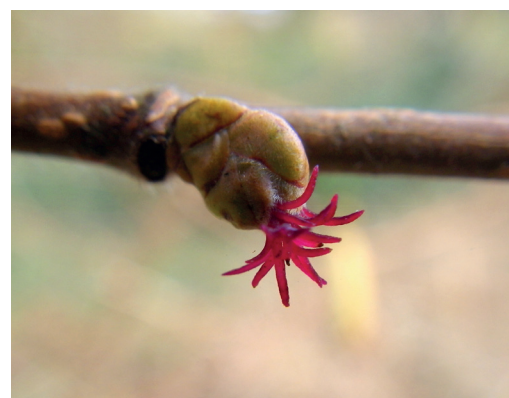
### *Betula pubescens* Ehrh.

#### Downy Birch

Native. Local. Stable. Bogs, heaths and woods.

First record (as *Betula alba*): Leighton, 1841, Bomere Pool (SHY).

Typically in acid habitats such as H8 *Ulex gallii* heath at Cramer Gutter; M2 *Sphagnum fallax* at Brown Moss (Trueman, 1983), Clarepool Moss (Trueman, 1981), Hodnet Heath, Lin Can Moss, Wem Moss and Whixall Moss (Trueman, 1981); M4 *Carex rostrata* at Clarepool Moss and Snipe Bog; M15 *Trichophorum germanicum* at Cramer

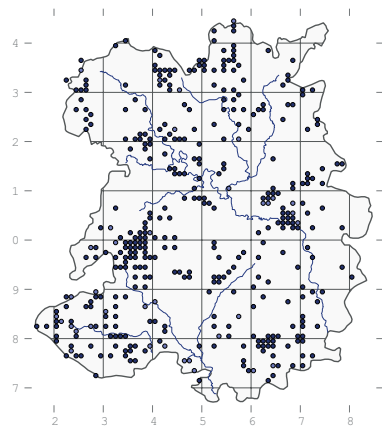


*Corylus avellana* (Dan Wrench)



*Bryonia dioica* (Dan Wrench)

Gutter; M16 *Sphagnum compactum* at Hodnet Heath; and M25 *Molinia caerulea* at Steel Heath. It colonises wetlands such as OV35 *Lythrum portula* vegetation by Pool 6 at Brown Moss; S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S24 *Calamagrostis canescens* at Fenemere and Oss Mere; S26 *Phragmites australis* reedbeds at Sweat Mere; and S27 *Comarum palustre* at Bomere and Shomere Pools (the last four by Wigginton, 1979); and at Brown Moss it is a problematic colonist of U2 *Deschampsia flexuosa* grassland where efforts have been made to restore heathland. It is frequent in woodlands, particularly on wet or acid soils, specifically W1 *Salix cinerea* at Shomere Pool; in all stands of W4 *B. pubescens*; in W5 *Alnus glutinosa* by the Bailey Brook at Millenheath, Kettle Mere, Sweat Mere and elsewhere; in W6 *Salix* × *fragilis* at Brown Moss, Hencott Pool, etc; in W7 *Lysimachia nemorum* at Birchen Park and Brook Vessons; in W10 *Quercus robur* at Oss Mere; and in W16 *Q. petraea* at Clarepool Moss and the Ercall.



### *Alnus glutinosa* (L.) Gärtn. Alder

Native. Widespread. Stable. Woods, bogs, river banks.

First record (as *Betula alnus*): Williams, c. 1800, 'sides of brooks and boggy grounds.'

Most common, and often dominant, in four types of woodland: W4 *Betula pubescens* in places like Calcott Moss and Haughmond Hill; W5 *A. glutinosa* around all the meres and mosses; W6 *Salix* × *fragilis* along all the lowland rivers and on some of the more drained mosses; and W7 *Lysimachia nemorum* along streams at Birchen Park, Fastings Coppice, Limekiln Wood (Trueman, 1981) and Upper Vessons. It is also recorded in W1 *Salix cinerea* at Calcott Moss; W8 *Fraxinus excelsior* in many places, including Bushmoor Coppice, Perryhouse Dingle and Whitwell Coppice; W9 *Sorbus aucuparia* at Betchcott Hollow; and W10 *Quercus*

*robur* at Bannister's Coppice, Cole Mere and Shrawardine Pool.

Outside woods, it has been found in A8 *Nuphar lutea* at Betton Pool (M.J. Wigginton, 1979); MG6 *Cynosurus cristatus* by the Severn at Becks Field; MG8 *Caltha palustris* at Ruewood (Trueman, 1981); M22 *Juncus subnodulosus* at Crose Mere (Wigginton, 1979); M23 *Juncus effusus* at Ebnaal Pool (Trueman, 1981); OV26 *Epilobium hirsutum* at Betton Pool; OV30 *Bidens tripartita* at Marton Pool, Chirbury, Newton Mere and White Mere (all Wigginton, 1979); and OV35 *Lythrum portula* community at Newton Mere. In swamps it is recorded in S6 *Carex riparia* at Blake Mere (Wigginton, 1979) and Fenemere; S12 *Typha latifolia* at Brown Moss; S17 *C. pseudocyperus* at Oxon Pool; S26 *Phragmites australis* at Fenemere, Sweat Mere (Wigginton, 1979) and Top Pool; and S27 *Comarum palustre* at Shomere Pool (Wigginton, 1979). Generally lowland, but up to about 420 m at Gatten Plantation (A.K. Thorne, 2003).



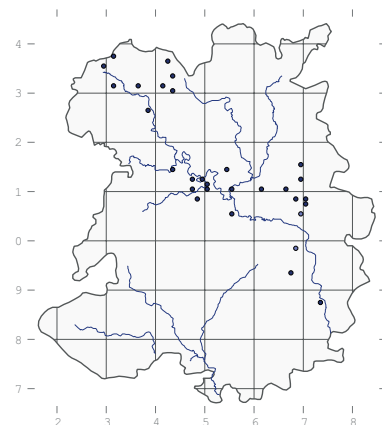
### *Alnus incana* (L.) Moench Grey Alder

Neophyte. Scattered. Increasing. Towns, riversides, woods.

First record: M. Gepp, 1944, 'one tree at Linley, probably originally planted.'

Commonly planted in parks and landscaping schemes, and sometimes in forestry, either as part of the deciduous margin to a block of conifers, as at Haughmond Hill, or even within a wood, as at Sweat Mere, where it has been planted with *A. glutinosa* (possibly inadvertently) on drained *Sphagnum* mire. It is often planted along river banks as it is tolerant of flooding. There is not much evidence of it spreading, and it is certainly not invasive, but it may be widely overlooked, as few people tend to record it. Sinker's (1979) observation of it spreading and hybridizing at Preston Montford has not been

repeated. A good place to see it is by the Severn in Shrewsbury, adjacent to the Castlefields footbridge.



### *Alnus cordata* (Lois.) Duby Italian Alder

Neophyte. Scattered. Increasing. Gardens and woods.

First record: Perring, 1971, Attingham Park.

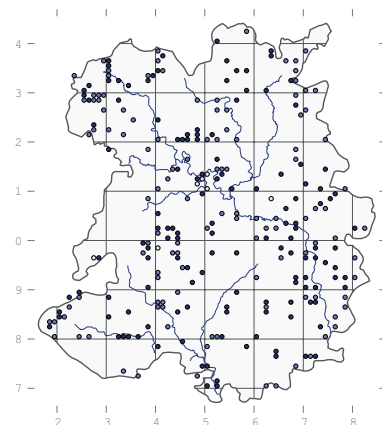
Most specimens are street trees, obviously planted and clearly not wild, so it tends not to get recorded. Beyond towns, it is planted in woods (as at Attingham) or quarries such as Lilleshall Quarry, A.K. Thorne, 2006.

### *Carpinus betulus* L. Hornbeam

Planted. Widespread. Increasing. Woods, parks and roadsides.

First record: Williams, c. 1800, 'hedges.'

Native in the south-east of England, but not as far north as Shropshire. It usually occurs as small numbers of trees in hedges or parkland on country estates, rarely reproducing by seed if at all. It was once grown for its wood, which was used for making tools, but it is not a forestry tree. A good place to see it is at Clunton Coppice, where there is a sizeable stand on the roadside. A tree of the cut-leaved cultivar *C. betulus* var. *incisa* in The Quarry, Shrewsbury (SJ486125), was first noted by W. Phillips and Hamilton in 1905.





***Corylus avellana* L.****Hazel**

Native. Widespread. Stable. Woods and hedges.

First record: Williams, c. 1800, 'woods and hedges.'

A common tree, found in most of the woods and hedges in the county. Sinker (1985, p. 238) suggested that it might be a useful ancient woodland indicator, but it is too widely planted, even in areas such as the Weald Moors, where it would presumably not have occurred naturally.

Its main habitat is in W8 *Fraxinus excelsior* woods throughout the county, but it is also recorded in W5 *Alnus glutinosa* at Brownheath Moss; W6 *Salix × fragilis* at Blake Mere, by the Borle Brook at Defford, Hencott Pool and elsewhere; W7 *F. excelsior* at Birchen Park and Limekiln Wood (Trueman, 1981); W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* in Bannister's Coppice, Haughmond Hill and elsewhere; W16 *Q. petraea* at Oaks Wood; W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood; W21 *Crataegus monogyna* scrub on Earl's Hill; W23 *Ulex europaeus* hedges at Mellin-y-Grogue; and W24 *Rubus fruticosus* hedgebanks at Mellin-y-Grogue and Pentre Hodre.

It often turns up in small quantities in grassland, especially on the more calcareous soils, but it cannot withstand mowing or grazing. It has been noted in CG2 *Avenula pubescens* at Craig-Ilwyn Quarry; MG1 *Arrhenatherum elatius* at the Speller; and MG5 *Festuca rubra* at Hayton's Bent (D.H. Wrench, 1995).

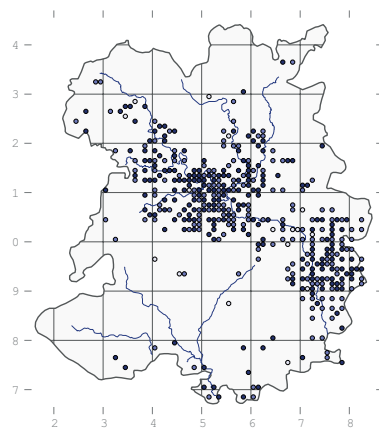
Filbert, *Corylus maxima* Miller, was recorded as a planted tree at Old St George's School, Shrewsbury (P. Parker, 1990) but that site has since been redeveloped for housing.

**Cucurbitaceae*****Bryonia dioica* Jacq.****White Bryony**

Native. Local. Stable. Hedges, scrub, woodland edge.

First record: Williams, c. 1800, 'hedges, common.'

Frequent in hedgerows and woodland edges in the lowlands. It is usually found growing up hedges and fences, but sometimes it extends into the edges of arable fields. It has been recorded in U1 *Rumex acetosella* and OV24 *Urtica dioica* at Abbot's Castle Hill (Trueman, 2005), and on Haughmond Hill it grows in similar situations; in both sites up to about 140 m altitude.

**Celastraceae*****Euonymus europaeus* L.****Spindle**

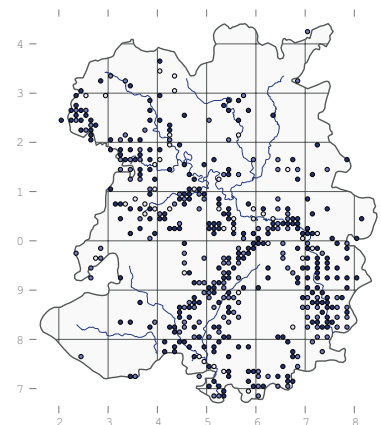
Native. Local. Stable. Axiophyte: woods and hedges.

First record: Williams, c. 1800, 'hedges about Eaton Mascott.'

Almost entirely restricted to W8 *Fraxinus excelsior* woodlands and hedges of similar composition, along Wenlock Edge, in the Oswestry Uplands and the valleys of the major rivers. Where hedgebanks are not too frequently cut, it often spreads into MG1 *Arrhenatherum elatius* grassland by suckering, as along track sides at the Speller. In many places it evidently spreads from bird sown seed, especially in limestone quarries such as Blackbridge Quarry on Llynclys Hill and Lea Quarry on Wenlock Edge.

It is sometimes planted in hedges, which accounts for its occurrence in areas where the soil is not suitable, as along the roadside at Oak Farm, Marton, Baschurch. It is also introduced in conservation plantings, as at Chelmarsh Reservoir (A.K. Thorne, 2000), but at nearby Chelmarsh Coppice it is present

naturally. Lowland: up to about 250 m at the top of Craig Sychtyn (R.A. Dawes, 2000) and at Hope Coppice.

***Euonymus latifolius* (L.)****Miller****Large-leaved Spindle**

Neophyte. Rare.

Planted at Badger Dingle (R.M. Stokes, 1994) and Clungunford (M.S. Duffell, 2008).

***Euonymus japonicus* L.f.****Evergreen Spindle**

Neophyte. Rare.

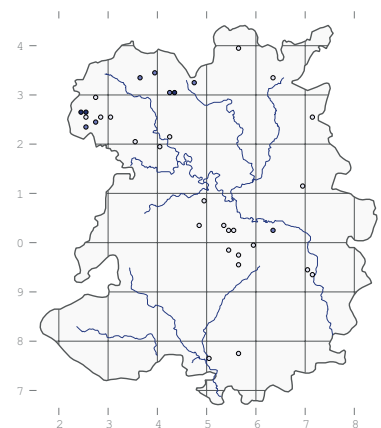
A common garden shrub, recorded as a garden throw-out at Nills Hill Quarry (M.S. Duffell, 2008).

**Parnassiaceae*****Parnassia palustris* L.****Grass of Parnassus**

Native. Rare. Decreasing. Axiophyte: calcareous fens.

First record: A. Aikin, 1796, Knockin Heath.

Restricted to calcareous flushes, specifically MG10 *Carex dioica* and M13 *Palustriella commutata* at Trefonen Marshes and, formerly, in M22 *Juncus subnodulosus* at Crose Mere (Trueman, 1981). It has declined dramatically in the county and is now on the verge of extinction.



## Oxalidaceae

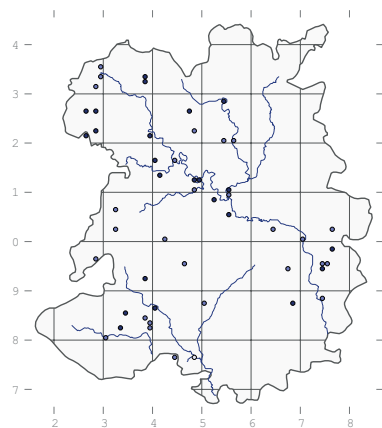
### *Oxalis corniculata* L.

#### Procumbent Yellow-sorrel

Neophyte. Scattered. Increasing. Gardens.

First record: A. Aikin, c. 1793, 'abundant near the Welsh Bridge, Shrewsbury.'

A common garden weed, often establishing itself on pavements and grassy roadside verges immediately adjacent, but not really becoming naturalised. It is recorded in churchyards such as those at Ford and Cound, in estates such as Attingham Park (first recorded by Perring in 1972) and Walcot Park (P.G. Green, 2005), and on roadsides, as at Ensdon. In the late 18<sup>th</sup> century Aikin found that it did not persist for more than a few years, and there are few sites where it has been recorded more than once (the exception being Attingham Park, where it has lasted more than 30 years), but it is probably ignored by most recorders as being too close to gardens.



### *Oxalis exilis* Cunn.

#### Least Yellow-sorrel

Neophyte. Rare. Increasing. Gardens, waste ground and road verges.

First record: R.M. Stokes, 1994, 'well naturalised in St Julian's churchyard and on a wall in Fish Street.'



*Elatine hexandra* at Newton Mere

A garden escape, recorded in several places around Shrewsbury, at Norton in Hales (Perring, 1997) and on a grassy roadside verge at Ellerdine Heath.

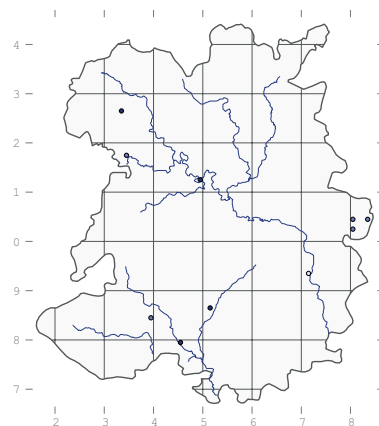
### *Oxalis stricta* L.

#### Upright Yellow-sorrel

Neophyte. Scarce. Stable. Gardens and roadsides.

First record: J. Fraser, 1866, Bridgnorth (HLU).

In the street near Greyfriars Bridge at Coleham (SJ495120, J. Martin, 1993), on waste ground near the canal at Queen's Head (R.M. Stokes, 2001), as a weed in the garden of the White House at Aston Munslow (S. & E. O'Donnell, 2010) and at the base of a wall in Onibury (P.R. Green & A.C. Leslie, 2010). A common garden weed, but only casual when it escapes, not persisting for any length of time.



### *Oxalis articulata* Savigny

#### Pink-sorrel

Growing with rubbish in a disused quarry at Caynton (SJ705220, B.R. Fowler, 1976).

### *Oxalis acetosella* L.

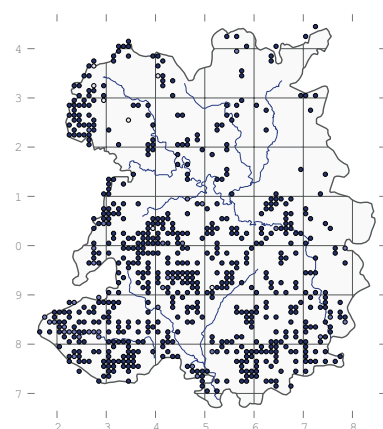
#### Wood-sorrel

Native. Widespread. Stable. Axiophyte: woods and upland grassland.

First record: Williams, c. 1800, 'woods, common.'

Although primarily a woodland plant, it also occurs in grassland and under bracken in the uplands where it is presumably a survivor from an earlier, afforested period. It has been recorded in CG10 *Helianthemum nummularia* in Minton Batch by R. Tapper in 1983 and in U20 *Pteridium aquilinum* on Titterstone Clee by A.K. Thorne in 1999. In woods, it is recorded in W4 *Betula pubescens* at Sweat Mere (Trueman, 1980); W5 *Alnus glutinosa* at Morton Pool (D.H. Wrench, 1991)

and Sweat Mere; W7 *Lysimachia nemorum* below the Ercall (Trueman, 1981), Fastings Coppice and Upper Vessons; and in dozens of stands of W8 *Fraxinus excelsior* and W10 *Quercus robur* woodland throughout the county. In the more upland woods, it is found in W16 *Q. petraea* at and Sowdley Wood and W17 *Leucobryum glaucum* at Oaks Coppice (A.J. Barker & J. Haigh, 2004). Williams noted the purple form, *O. acetosella* var. *purpurea*, by the side of the lane between Habberley and Marsley in c. 1800; it is widely distributed throughout the county but is less common than the white form.



### *Oxalis tetraphylla* Cav.

#### Four-leaved Pink-sorrel

Neophyte. Rare. Casual. Gardens.

Well established at Marl Allotment on Whixall Moss (SJ500358) in 2012.

## Euphorbiaceae

### *Mercurialis perennis* L.

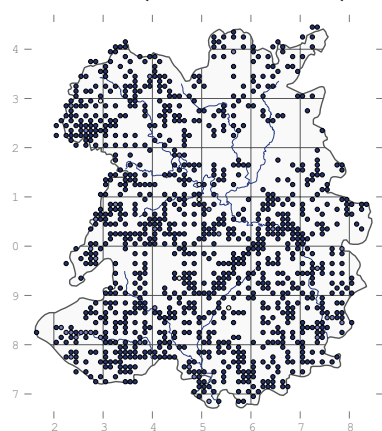
#### Dog's Mercury

Native. Widespread. Stable. Woods and hedges.

First record: Williams, c. 1800, 'hedges.'

A common woodland plant which is ubiquitous in the more calcareous woods, mainly W8 *Fraxinus excelsior* and W6 *Salix × fragilis* woodland. It also grows in limestone grassland, especially in quarries where there is woodland adjacent. These swards tend to be floristically similar to the ground layer of W8 woods rather than the characteristic grassland vegetation. It persists in scrub and on hedgebanks where woodland has been cleared, and it readily colonises new broadleaf plantations and even motorway verges. In dense conifer plantations it is often reduced to scattered wilting stems. It is very abundant along Wenlock Edge and the Oswestry Uplands; elsewhere

it is widespread but sometimes rare, especially in farmland and on more acid substrates, but it is surely present in almost every tetrad in the county.



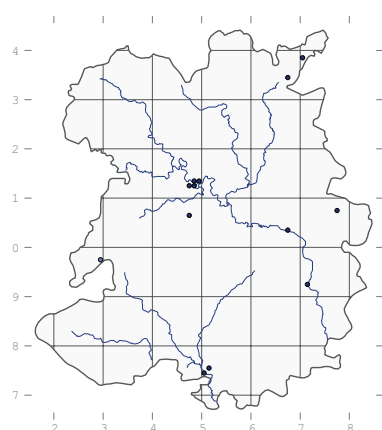
### *Mercurialis annua* L.

#### Annual Mercury

Native. Local. Increasing. Urban areas and arable fields.

First record: Williams, c. 1800, 'gardens in Frankwell.'

Still common in Frankwell, growing on pavements, in gardens and on heaps of soil and rubble on building plots. It favours slightly calcareous soils and presumably finds mortar and concrete a suitable substrate. Shropshire is on the north-west edge of its range, and it appears to be increasing here. It is now known in other parts of Shropshire, including Castlefields and Copthorne, and in Market Drayton, Bridgnorth, Ludlow and Ironbridge. In 2009 it turned up in a maize field at Timlet – several large plants, up to 1m tall – which appears to be a new habitat for it.



### *Euphorbia dulcis* L.

#### Sweet Spurge

Neophyte. Rare.

Once recorded, as a garden escape at Old St Chad's, Shrewsbury, in 2007 (R.M. Stokes, conf. Whild).

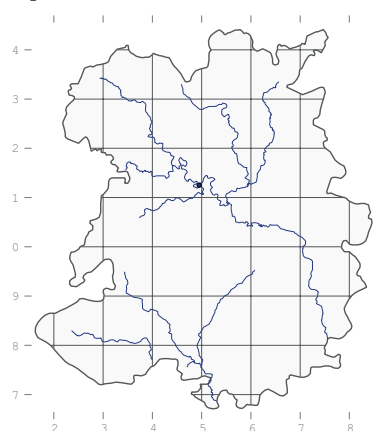
### *Euphorbia helioscopia* L.

#### Sun Spurge

Native. Widespread. Stable. Field margins and gardens.

First record: T.W. Wilson, 1835, 'Shropshire' (SHY).

In gardens and arable fields, typically in OV10 *Senecio vulgaris* community, as on waste ground at Newport (Trueman, 1981) or OV14 *Urtica urens* in an arable field at the Sands. Plants can be very variable in size – more so than the textbooks allow; individuals more than 1 m tall grew in a beet field at Brockton near Sutton Maddock in September 2009 (BIRM).



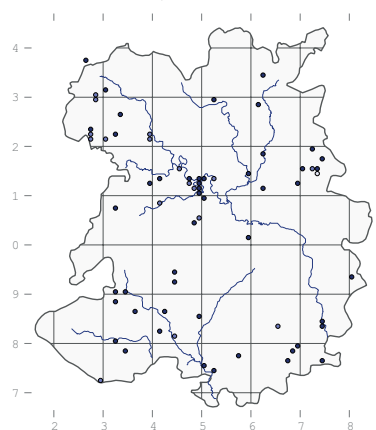
### *Euphorbia lathyris* L.

#### Caper Spurge

Neophyte. Scattered. Increasing. Gardens, churchyards and waste ground.

First record: Leighton, 1841, 'cultivated ground around Shrewsbury.'

A common garden weed in towns, occasionally established outside gardens but rarely for long and not increasing in the wild. It is sometimes recorded in open woods in the south of England, but the only instance of it growing in such a habitat in Shropshire is at Nortoncamp Wood in 1917 A.E. Ruthven-Murray.



### *Euphorbia exigua* L.

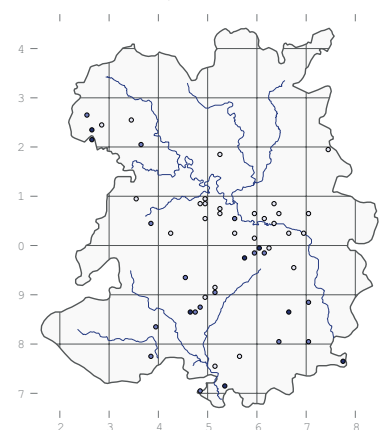
#### Dwarf Spurge

Archaeophyte. Scarce. Stable. Arable fields, quarries.

First record: Leighton *et al.*, 1841, 'fields near Astley, Berrington, Bomere, Coalport, Ludlow, Newport, the Wrekin and West Felton.'

Now a rare casual on bare ground.

There are recent records for it at Alcaston Coppice (SO466866, M.B. Fuller, 1989), in a garden in Pant (H. Webster, 1989), an arable field at Westhope (SO465866, A. Dyer, 1990), a quarry on Wenlock Edge (SO604995, A.K. Thorne, 1990), a flax field at Bewdley (SO773768, J. Martin, 1991), a fruit field at Llynclys (SJ265233, A.R. Franks, 1994), a bean field at Caynham (SO536717, B.J. Laney, 2007), a roadside verge at Overton (SO665869, I.P. Green, 2009) and along a track at Lilleshall Quarry (SO577970, 2011).



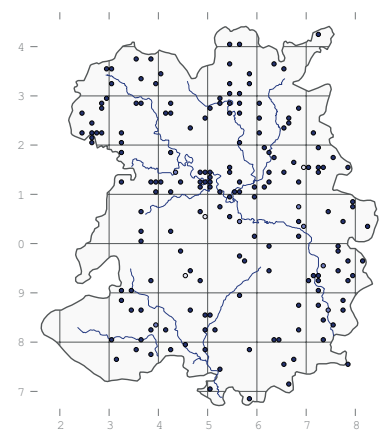
### *Euphorbia peplus* L.

#### Petty Spurge

Archaeophyte. Widespread. Stable. Arable fields, gardens, waste ground.

First record: Leighton, 1841, 'cultivated and waste ground, common.'

Frequent in gardens and waste ground alongside roads in towns; also in arable field margins and on disturbed soil throughout.





## Vascular plants

[*Euphorbia esula* L., Leafy Spurge

Claimed by Lloyd & Rutter (1957) for the vicinity of Bishops Castle, but without date or attribution.]

### *Euphorbia cyparissias* L.

#### Cypress Spurge

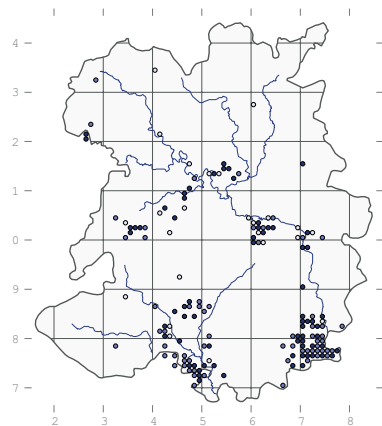
A rare garden escape, recorded at Whitcliffe (H. Spare, 1841), Buildwas (G. Potts & W.B. Allen, 1918), Attingham Park (Perring, 1972), Coton Hill railway sidings (R.M. Stokes, 1996), on a verge at Llyncllys Crossroads (R.A. Dawes, 2009) and a huge patch on the verge of the B4368 at Broadstone.

### *Euphorbia amygdaloides* L.

#### Wood Spurge

Native. Local. Stable. Axiophyte: lowland woods.

First records: Williams, c. 1800, 'woods about the Stiperstones' and 'about Farley, near Wenlock'.



A perennial herb, typically on woodland edges or along rides and paths where there is more light, but it can also be found under a closed canopy. Many of its sites are neutral W10 *Quercus robur*, as at Haughmond Hill and Bannister's Coppice, where it is abundant, but more often it occurs in more calcareous W8 *Fraxinus excelsior*, as at Redhill Coppice (Trueman, 1981) and along the Borle Brook from Ray's Bridge to New England.

It is mostly restricted to ancient woodland, but it does colonise quarries such as Llanymynech Rocks very readily, and it is often grown in gardens, from where it can spread along roadsides (e.g. at Nobold). The cultivated plant *Euphorbia amygdaloides* ssp. *robbiae* (Turill) Stace is also widely grown in gardens and sometimes escapes. The introduced populations in hedges (e.g. at the Humbers) do not seem to last, but it has been well established in secondary woodland

at Llanymynech Heritage Area since at least the early 1990s (H. Webster). Good places to look for it include Farley Dingle and many parts of the Wyre Forest. The highest altitude for it is 210 m at Snailbeach Coppice.

## Elatinaceae

### *Elatine hexandra* (Lapierre) DC.

#### Six-stamened Waterwort

Native. Rare. Decreasing. Axiophyte: mesotrophic lakes.

First record: Williams, 1798, 'under the water on the north-east side of Bomere Pool'.

Williams's record for Bomere Pool was the first record for Britain (Smith & Sowerby, 1790-1814) although it was incorrectly changed to *E. hydropiper* by Smith. It still occurs at Bomere in S13 *Typha angustifolia* swamp on the margins of the mere. The only other site is Newton Mere, where it is abundant on the margins in OV35 *Lythrum portula* and A22 *Littorella uniflora* vegetation in shallow margins. It was first recorded here by W.E. Beckwith some time before 1889.

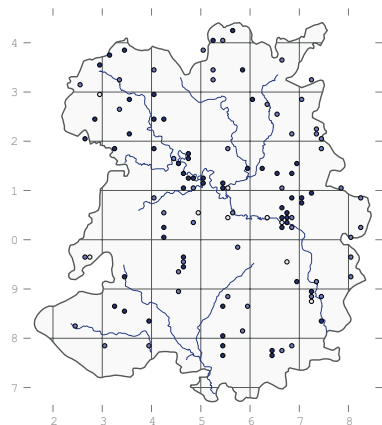
Historically, it was present in the Mere at Ellesmere, from 1841 (J.E. Bowman) until 1871 (F. Stratton) and White Mere (R.M. Serjeantson & Beckwith, 1880, SHY). It only flowers when stranded on the bare shoreline during a hot summer, so it is dependent on a fluctuating water level to reproduce. This is becoming a rare habitat in the county, as so many of the meres have had their water levels stabilised. Shade is also a threat, as the meres are deep, and the shallow margins are typically very narrow.

## Salicaceae

### *Populus alba* L.

#### White Poplar

First record: Williams, c. 1800, 'woods, hedges and sides of brooks.'



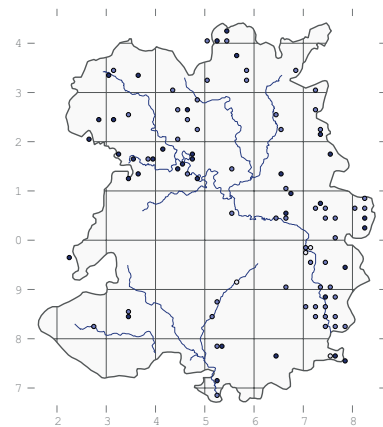
Widely planted in parks, woods, on roadsides and sometimes as specimen trees on estates. It subsequently forms thickets by suckering, and seems to particularly favour damp ground by rivers.

### *Populus × canescens* (Aiton) Smith (*alba* × *tremula*)

#### Grey Poplar

First record: Williams, c. 1800, 'hedges.'

Widely planted in lowland areas, by rivers and canals, in woods and in country estates.



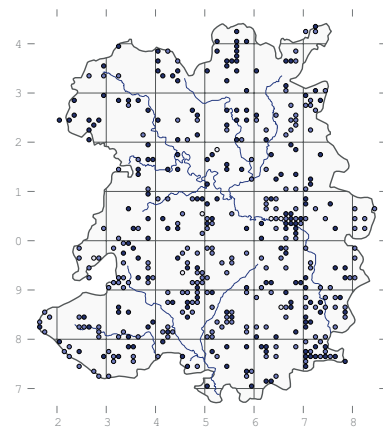
### *Populus tremula* L.

#### Aspen

Native. Widespread. Stable. Woods, hedges and scrub.

First record: Williams, c. 1800, 'woods and hedges.'

Scattered throughout the county, in hedges and thickets, often forming sizeable stands where allowed to sucker freely. It is recorded as spreading into MG5 *Festuca rubra* grassland at Tana Leas (D.H. Wrench, 1995) and S27 *Comarum palustre* at Bomere Pool (M.J. Wigginton, 1979). At Brown Moss it is vigorous in W6 *Salix* × *fragilis* woodland by Pool 5, and it is found in W8 *Fraxinus excelsior* woodland at Bushmoor Coppice and W10 *Quercus robur* woodland on Haughmond Hill.

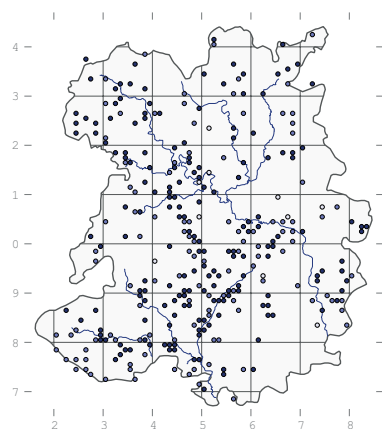


***Populus nigra* L.****Black Poplar**

Native. Local. Stable. Riversides and hedges.

First record: Williams, c. 1800, 'sides of brooks.'

Native in river floodplains, presumably in W6 *Salix* × *fragilis* woodland, but now very hard to find in semi-natural habitats as it usually occurs as specimen trees in hedges or fields by rivers. Many if not all were possibly planted originally, although many are now very old. A good place to see it is by the Roden in Shawbury. In recent years the Environment Agency has sponsored the planting of many new saplings. Native plants are ssp. *betulifolia* Münchh.

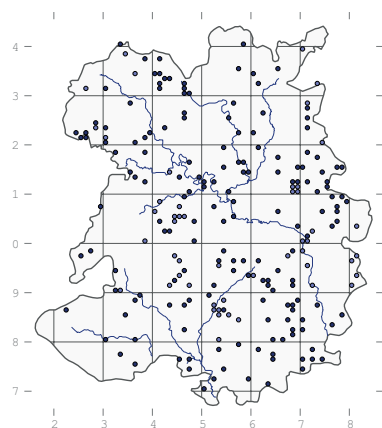
***Populus* × *canadensis***

Moench (*deltoides* × *nigra*)

**Hybrid Black Poplar**

Neophyte. Widespread. Increasing. Woods, riversides, roadsides.

First record (as *P. serotina*): Perring, 1974, Easthope Pools.



Planted throughout the county, often as individual specimen trees or as rows along field margins, on edges of plantations or roadsides or in wet places such as riversides and swamps. A few trees have been planted in S26 *Phragmites australis* fen at Top Pool and

there are some in W6 *Salix* × *fragilis* at Cosford Wood and Morton Pool. The variety 'Serotina' is known from several places, including the south-east side of White Mere (det. A.O. Chater, 2005) and 'Robusta' is planted around the pools in Tunstall Wood.

***Populus* × *jackii* Sarg.**

(*deltoides* × *balsamifera*)

**Balm-of-Gilead**

Neophyte. Rare.

Probably quite common, but so far only recorded at SO38D (S. Kingsbury, 1994), the Humbers and Longford.

***Populus trichocarpa* Torrey**

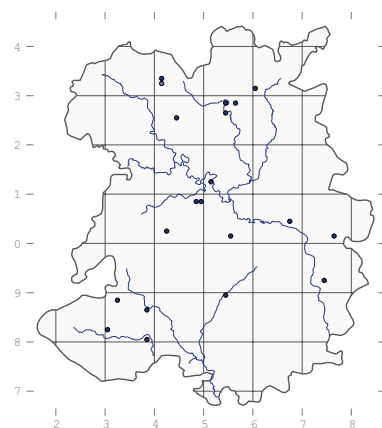
& A. Gray ex Hook.

**Western Balsam-poplar**

Neophyte. Scattered. Increasing. Woods and hedges.

First record: Wigginton, 1979, White Mere.

An increasingly widespread tree used in shelter beds and forestry plantations, often in wet places. There are rows alongside a footpath at Bulhill and at the west end of Bomere Pool, and it still occurs at White Mere, where it is in W6 *Salix* × *fragilis* woodland.

***Populus* 'Balsam Spire'**

(*balsamifera* × *trichocarpa*)

**Hybrid Balsam-poplar**

Neophyte. Rare.

Just two records to date: planted by the Severn at Cronkhill (2005, BIRM) and 'a fine row of trees' by the car park at Preston Montford (C.A. Stace, 2006) but they have since been felled.

***Populus balsamifera* L.****Eastern Balsam-poplar**

Neophyte. Rare.

In Candy Valley (1998, BIRM), Chelmarsh Reservoir (A.K. Thorne, 2000), and Little Sutton.

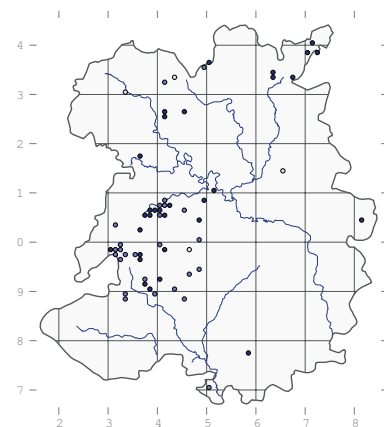
***Salix pentandra* L.****Bay Willow**

Native. Local. Stable. Axiophyte: wet woodland and upland hedges.

First record: Leighton, 1841, Eytton upon the Weald Moors (SHY).

On peaty soils by streams, pools and rivers. The upland populations are to be found in the headwaters of the Rea Book and the River Onny, around the Stiperstones, Earl's Hill and the Long Mynd. It was not recorded here until the 1880s (W. Beacall) although Leighton had found hybrids lower down the valley much earlier. A good place to see it is at the Knolls (SO362962) where it occurs in a species-rich hedge by a stream. The lowland populations are more associated with river basin mires than with raised bogs, although it has been recorded at White Mere (W.E. Beckwith, 1880 – C. Walker, 1980). The main lowland population occurs in the marshes around Smythemoor, at the source of the rivers Tern and Duckow. There are a couple of shrubs in the valley of the River Perry, at Baggy Moor and Westonwharf, and it was once recorded further upstream at Babbinswood (Dovaston, 1841) and, slightly to the east of this, a few trees in a wet wood at Burlton.

There is no W3 *Salix pentandra* woodland in Shropshire, but at Earlsdale it grows in W1 *Salix cinerea* woodland. Generally lowland, but up to 420 m at The Knolls (SO362975, P.D. & S. Kingsbury, 1991). The shrub at Horseditch (alt. 370 m, SO589772, P.H. Waite, 1982) is an isolated specimen near a ruined cottage and it may have been planted.



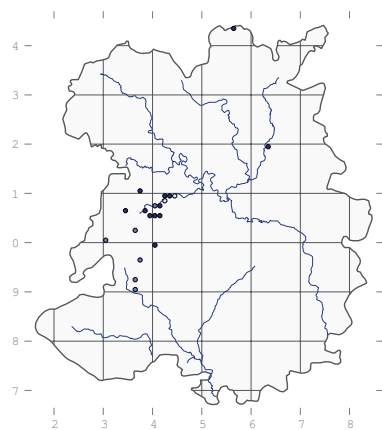
***Salix × meyeriana*** Rostk. ex Willd. (*pentandra* × *euxina* × *alba*)

### Shrewsbury Willow

Native. Local. Stable. Wet woodlands and lowland hedges.

First record: Leighton, 1836, 'two large trees beyond Hanwood' (CGE).

In the New Atlas (Preston *et al.*, 2002), all records of *S. × meyeriana* are mapped as alien, implying that it is an artificial hybrid that is only ever present as a planted tree. This could be true, but the plants in Shropshire have a distribution in the foothills of the Stiperstones, where the parents would naturally coincide. The first British record of this species was by Leighton, when he discovered it growing by the Rea Brook at Hanwood. It is still present there in several places (D.H. Wrench, 2003). Most of its sites are in hedges by roads or streams in the valley of the Rea Brook. Further afield, at Aston Rogers and Waters Upton it seems likely that the trees were planted. The shrubs at Oss Mere are in unmanaged and undisturbed W5 *Alnus glutinosa* woodland and could well be spontaneous. A good place to see it is a small swampy wood by the lane up to Earl's Hill reserve, at SJ410057, where it grows with both parents in what is probably best described as W1 *Salix cinerea* carr.



***Salix × fragilis*** I.V. Belyaeva (*euxina* × *alba*)

### Crack Willow

Native. Widespread. Stable. Riverbanks and wet woods.

First record (as *S. fragilis*): Williams, c. 1800, 'hedges and sides of pools.'

Along the banks of all rivers and in hedges and woods in low-lying areas. It frequently establishes itself in wetlands such as M27 *Filipendula ulmaria* at Cole Mere; OV26 *Epilobium hirsutum* at Betton Pool (M.J. Wigginton, 1979) and by the Severn opposite Shrewsbury

Castle; OV30 *Bidens tripartita* at Aber Tanat oxbow lake (Trueman, 1981) and White Mere (Wigginton, 1979); S6 *Carex riparia* at Fenemere; S7 *C. acutiformis* in the Old River Bed; S12 *Typha latifolia* at Newton Mere and Shrawardine Pool; S14 *Sparganium erectum* at Betton Pool (Wigginton, 1979); S17 *Carex pseudocyperus* at Oxon Pool; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* in the old Shrewsbury Canal at Wappenshall and at Top Pool; and S27 *Comarum palustre* at Berrington and Bomere pools (both Wigginton, 1979) and Shrawardine Pool.

Its main habitat is in woodland, however, most notably W6b *S. × fragilis* woodland along riverbanks throughout the lowlands and many other places, including around most of the meres and along all the lowland rivers. It is also known in W5 *Alnus glutinosa* in many places, including Blake Mere (Wigginton, 1979), Sweat Mere (J. Mallabar, 1998) and Top Pool; and W8 *Fraxinus excelsior* near Betton Pool.



***Salix alba*** L.

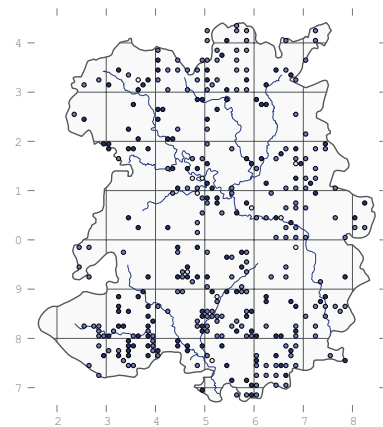
### White Willow

Archaeophyte. Widespread. Stable. Riverbanks, hedges, gardens.

First record: Williams, c. 1800, 'common about Ludlow, Burford and Millichope. On the bank of the Meole Brook, near Meole bridge. Newport.'

Most trees are almost certainly planted, usually by rivers or in gardens. It is rarely found fully naturalised in the wild, but it occasionally arises from broken branches that strike on riverbanks. Some of the finest stands are along the banks of the Morda and Vyrnwy at Pentreheylin. The commonest variety is *S. alba* var. *alba*; var. *caerulea* (Smith) Dumort., Cricket-bat Willow, which was first recorded by Leighton at Shrewsbury Castle in about 1841 and is occasional. The var. *vitellina* (L.) Stokes, Golden Willow, is less common and is almost

invariably planted; although Sinker, in 1980, considered it to be self-struck on the banks of the Severn at Preston Montford. Sinker (1985) also states that *S. alba* 'Britzensis' is commonly planted around Shrewsbury.

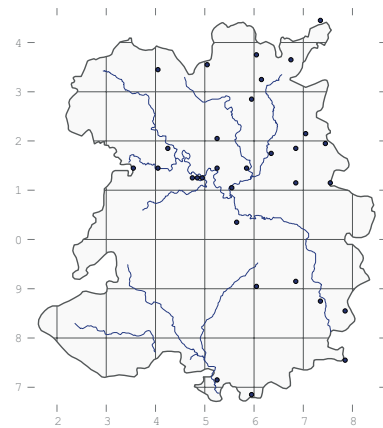


***Salix × sepulcralis*** Simonkai (*alba* × *babylonica*)

### Weeping Willow

Neophyte. Widespread. Stable. Gardens and river banks.

Frequent on river banks in towns and villages, and also quite often in gardens. Never really naturalised.



***Salix triandra*** L.

### Almond Willow

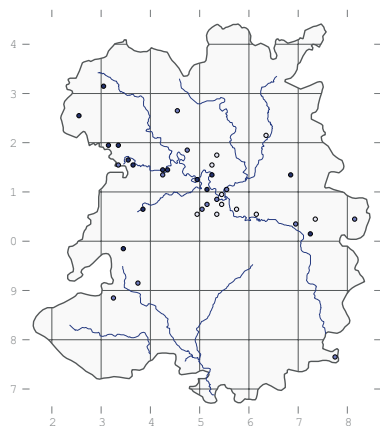
Native. Local. Stable. River banks.

First records: Williams, c. 1800, 'by the side of Conover, Cantlop and Eaton brook. Hedges about Wheatley near Sundorn.'

Mainly in the middle reaches of the Severn and tributaries such as the Cound Brook, where R.D. Meikle recorded it in 1975. Self-struck plants grow on muddy banks in the Severn by the English Bridge. More obviously planted specimens occur in osier beds at Mere Pool and Crew Green (S. Stafford, 1978). Its habitat is W6c *S. triandra* woodland, which is a winter-flooded, open woodland type with a ground flora dominated by *Urtica dioica* and, increasingly in recent years, the rather



unwelcome newcomer *Impatiens glandulifera* in the summer. These stands of woodland are typically fragmentary, because they are competing for some of the most productive farmland, but they do grow rapidly and readily wherever they are allowed.



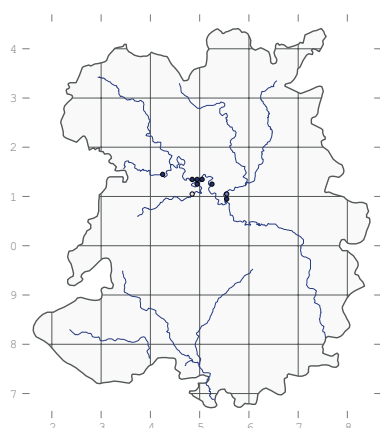
***Salix × mollissima* Hoffm. ex Elwert (*triandra × viminalis*)**

**Sharp-stipuled Willow**

Native. Rare. Stable. River banks.

First record (as *S. undulata*): Leighton, c. 1841, 'large tree over Meole Brace bridge' (SHY).

A spontaneous hybrid, restricted to the vicinity of Shrewsbury where both parents are reasonably common. The first recent record was by Perring in 1972 at Attingham Park, in an osier bed by the Tern, where it was doubtless planted. The remaining records are all of seemingly wild plants. The most upstream one is at Weir Farm, Montford (conf. R.D. Meikle); it also grows on a mud bank below the English Bridge (C.D. Preston, 1998), and further downstream at Castlefields and Weirhill. In each site it grows in W6c *Salix triandra* woodland.



***Salix purpurea* L.**

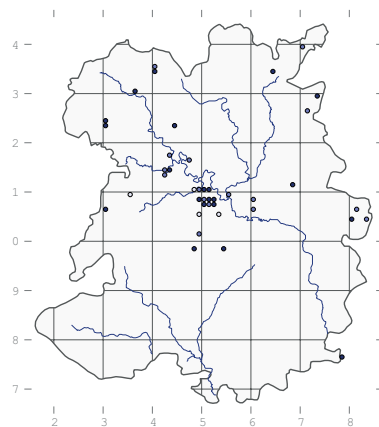
**Purple Willow**

Native. Local. Increasing. Axiophyte: riverbanks and meres.

First record: Williams, c. 1800 (as *S. lambertiana* Sm.), 'in a hedge at the bottom of a field called the Hop-yard, on the estate of E. Williams Esq., Eaton Mascott; and in hedges about Eaton Mascott.'

Occasional in the fen and scrub around the meres, in S13 *Typha angustifolia* at Bomere Pool; W1 *Salix cinerea* at the Mere at Ellesmere; and W6 *Salix × fragilis* woodland around the margin of Morton Pool.

Where it is wild it is a useful axiophyte, but elsewhere it is often planted, as at Mere Pool and in hedges nearby. A narrow-leaved variety has been planted by Middle Pool, Oakengates.



[*Salix × rubra* Huds. (*purpurea × viminalis*)

Green-leaved Willow

Recorded by M.J. Wigginton by the Mere at Ellesmere in 1979, but there is no independent confirmation.]

***Salix × forbyana* Smith (*S. cinerea × purpurea × viminalis*)**

**Fine Osier**

Neophyte. Rare. Decreasing. Osier beds.

First record: Leighton, c. 1841 (conf. W. Borrer), Eyton upon the Weald Moors.

Once widely planted for basket-making, but possibly also occurring as a spontaneous hybrid. Leighton does not say whether his specimen was wild or planted. It used to grow at Mere Pool (P.H. Cornish, 1978) and in osier beds by the Rea Brook Valley in Shrewsbury (Sinker, 1978), where it seems to have died out, but the council has replanted willow beds there in recent years.

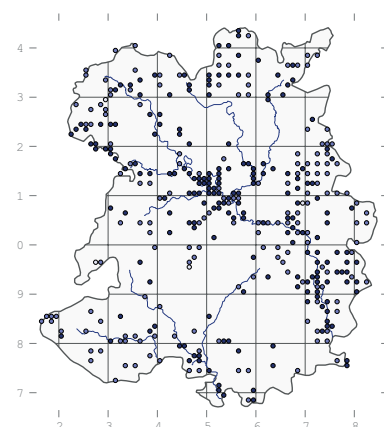
***Salix viminalis* L.**

**Osier**

Native. Local. Increasing. Riverbanks, ponds, hedges.

First record: Leighton, 1841, 'banks of the River Severn, Shrewsbury' (SHY).

Common along the banks of the lowland rivers, especially the Severn. It also occurs in hedges and scrub in low-lying areas such as the Weald Moors and river floodplains. It is much rarer in the Meres, although it appears to be increasing. For instance, it was first recorded at Berrington Pool in 1996 and at Bomere Pool in 2003, despite numerous earlier surveys. Part of this may be due to the increase in scrub in marginal habitats in recent decades, and part due to the frequency with which it is now planted by canals, roads and around artificial lakes and gravel pits. It is a natural component of the willow subcommunities of W6 *Salix × fragilis* woodlands by rivers. At Berrington Pool it occurs in W1 *Salix cinerea* carr around the margins, and at Fenemere it grows in S26 *Phragmites australis* fen.



*Salix x multinervis* at Brown Moss

## *Salix elaeagnos* Scop

### Olive Willow

Neophyte. Rare. Increasing. Gardens.

Planted in gardens and occasionally surviving in abandoned estates (e.g. Apley Park in Wellington) or in semi-wild situations (e.g. at Church Farm, Rowley, J. Ing (det. Whild), 2010). Never naturalised.

## *Salix* × *smithiana* Willd.

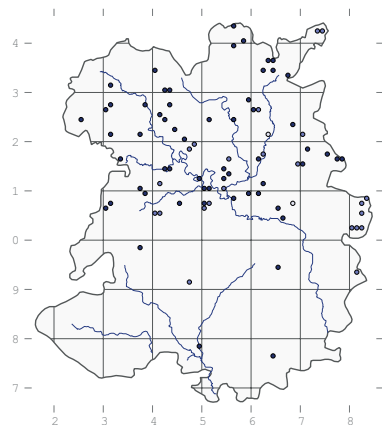
(*caprea* × *viminalis*)

### Silky-leaved Osier

Native. Scattered. Stable. Hedges, woods.

First record (as *S. smithiana*): Leighton, (conf. W. Borrer), c. 1841, Cold Hatton Heath (SHY, det. E.F. Linton).

Occasional in hedgerows, and large stands are rare, but there is a damp hollow on the western side of Haughmond Hill, just above the quarry, where it fills a wet hollow in W10 *Quercus robur* woodland. At Sweat Mere it is a minor component in W5 *Alnus glutinosa* woodland. Generally lowland, but up to about 450 m in Gatten Plantation (2002, BIRM).



## *Salix caprea* L.

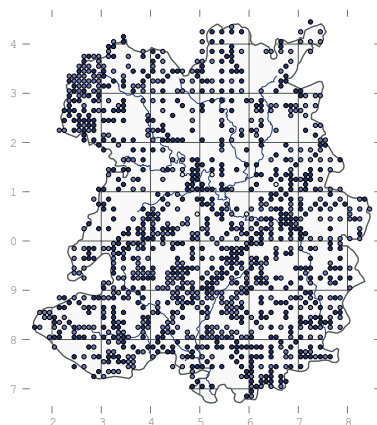
### Goat Willow

Native. Widespread. Stable. Woods, hedges, waste ground.

First record: Williams, c. 1800, 'hedges.'

Primarily on drier, calcareous soils especially old limestone quarries and waste ground, but also on moist to wet, neutral and even occasionally quite acidic soils.

Its main vegetation community is W8 *Fraxinus excelsior* woods, as at Craig Sychtyn, Limekiln Wood and along the Borle Brook; and it is recorded in W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Muxton Bridge (Trueman, 1981) and S27 *Comarum palustre* fen at Bomere Pool (M.J. Wigginton, 1979).



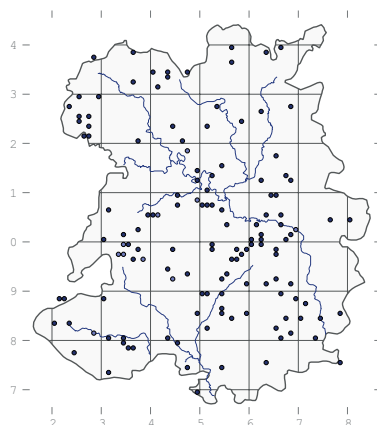
## *Salix* × *reichardtii* A. Kerner

(*caprea* × *cinerea*)

Native. Widespread. Stable. Hedges, woods, quarries and river banks.

First record: Perring, 1975, Banks of the Severn at Coalport.

Because this is a highly fertile hybrid which backcrosses with each parent to form a range of intermediates, the ecological range of *S. x reichardtii* is very broad. Like *S. caprea* it can be found in limestone quarries such as Blackbridge on Llynclys Hill and Lea on Wenlock Edge and, like *S. cinerea*, it grows in peat bogs such as Wem Moss and Black Coppice. It is, however, rarely abundant and it is present mostly as isolated shrubs. It cannot tolerate very wet conditions such as the regular inundation that occurs in the pools at Brown Moss, although there are a few plants even there, on the drier soil. Although it is a common plant in the county, it should be recorded only with care, so there are relatively few records. A good place to look for it is along the track through Haughmond Abbey Wood, where there are some fine trees.



## *Salix* × *capreola* J. Kerner ex Andersson

(*caprea* × *aurita*)

Sinker collected a specimen of this rare hybrid in a field hedge at Coldyeld (SO368963) in 1976 (conf. R.D. Meikle), at an altitude of 315 m.

## *Salix cinerea* L.

### Grey Willow

Native. Widespread. Stable. Ponds, rivers, hedges, wet woods.

First record (as *S. aquatica*): Williams, c. 1800, 'hedges.'

The commonest willow in the county, both in distribution and abundance. It is typical of wet woods, especially W1 *S. cinerea* in places like Berrington Pool, Snipe Bog and the Moors at Ellesmere; W2 *S. cinerea* is much less common, but can be seen at Shrawardine Pool and Top Pool; it is also in all stands of W4 *Betula pubescens* and both W5 and W6 *Salix* × *fragilis* woods. It is occasional in W7 *Lysimachia nemorum*, as at Brook Vessons; W8 *Fraxinus excelsior* at Blakeway Coppice, Redhill Coppice and elsewhere; W10 *Quercus robur* on Haughmond Hill, Shrawardine Pool and Oss Mere.

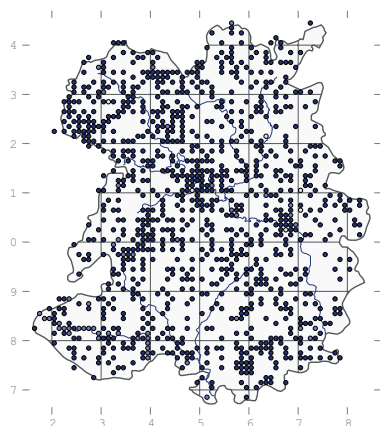
In other habitats, it occurs in A8 *Nuphar lutea* community in the margins of Betton Pool; A10 *Persicaria amphibia* at Brown Moss; M2 *Sphagnum fallax* at Hodnet Heath; M4 *Carex rostrata* at Snipe Bog; M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991), Sweeny Fen and Trefonen Marshes; M23 *Juncus effusus* at Bomere Pool, Brown Clee and Oxon Pool; M25 *Molinia caerulea* at Steel Heath; M27 *Filipendula ulmaria* at Lower Netchwood and Marl Allotment; and M36 *Chrysosplenium oppositifolium* at Poles Coppice.

It is also recorded in swamps such as OV26 *Epilobium hirsutum* at Betton Pool (M.J. Wigginton, 1979) and Bomere Pool; OV30 *Bidens tripartita* on the margin of Marton Pool Chirbury and Newton Mere (both Wigginton, 1979); S6 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S7 *C. acutiformis* in the Old River Bed; S9 *C. rostrata* at Berrington Pool; S12 *Typha latifolia* at Brown Moss, Brownheath Moss and elsewhere; S14 *Sparganium erectum* at Berrington Pool and Old Oswestry; S17 *C. pseudocyperus* at Oxon Pool and Shrawardine Pool; S18 *C. otrubae* at the Speller; S24 *Calamagrostis canescens* at Fenemere and Oss Mere (Wigginton, 1979); S26 *Phragmites australis* at Marton Pool Chirbury, Oss Mere and elsewhere; S27 *Comarum palustre* at Bomere Pool (Wigginton, 1979) and Shrawardine Pool.

In a few places it is recorded as an invasive shrub in grassland such as CG2 *Avenula pubescens* at Craig

Sychtyn, MG1c *Filipendula ulmaria* on the banks of the Severn in Shrewsbury; MG5 *Festuca rubra* in a quarry on the Ercall; and MG10 *Holcus lanatus* on Brown Moss.

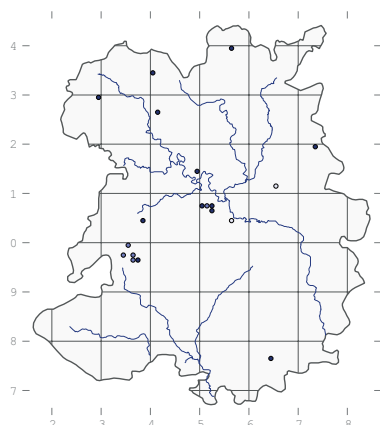
It is a very variable shrub, with a wide variety of leaf shape, size and pubescence, some of which may be caused by hybridization and introgression. Nearly all plants in Shropshire are *Salix cinerea* L. ssp. *oleifolia* Macreight (Rusty Sallow), but *S. cinerea* L. ssp. *cinerea* grows at Trefonen Marshes (SJ245265, 2010, Lockton, conf. R.D. Meikle, BIRM). It is a small, downy shrub up to 1.5 m tall, and it is best considered an axiophyte restricted to calcareous fens.



***Salix × multinervis* Doell (*S. cinerea* × *aurita*)**

Native. Local. Stable. Axiophyte: lowland heath and bogs, and upland moors.

First record: T. Butler, c. 1886, Harnage (SHY).



One of the more common willow hybrids, found where both parents occur. This includes upland sites such as the Stiperstones and in heathy places in the lowlands. It is particularly characteristic of the meres and mosses, where *S. aurita* is now very rare, but the hybrid is less susceptible to defoliation by insects. It is also more tolerant of wet soils and it tolerates

seasonal inundation at Brown Moss, growing in OV35 *Lythrum portula* vegetation. Although these are the sites where it might be expected, it also occurs further afield, and it was recorded at the abandoned railway station in Oswestry by M. Wainwright (det. F.H. Perring) in 1986.

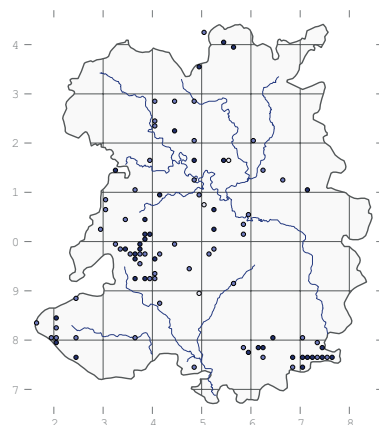
***Salix aurita* L.**

**Eared Willow**

Native. Local. Decreasing. Axiophyte: heaths, woods, hedges.

First record: Williams, c. 1800, 'hedges.'

A small tree of acid soils, typically now in the uplands but formerly throughout much of the plain. Although there are few old records, Williams and Leighton considered it too common to list sites. It was common around the meres, but is now very rare. Wigginton recorded it growing in OV30 *Bidens tripartita* on the margin of Marton Pool, Chirbury in 1979. At Brown Moss it recently reappeared when *Salix cinerea* scrub was cleared from around the main pool, presumably from buried seed; but the leaves were destroyed by insect pests. In the Wyre Forest and in upland sites it seems to fare better, and it is still a reasonably common plant. Here it is typical in woodland, in W10 *Quercus robur* woods in the lowlands and W16 *Quercus petraea* at higher altitudes, and perhaps most characteristically in W17 *Leucobryum glaucum* at Brook Vessons. One of the best places to see it is on the Stiperstones, where it is occasional throughout but especially common along the flushes on the eastern slopes.



***Salix myrsinifolia* Salisb.**

**Dark-leaved Willow**

On Shawbury Heath (Anon., BEC Rep. 1946) and Merrington Green (Sinkler, 1982) 'near stop 8 on the nature trail – appears wild.' The latter is said to have died in 1995 (P. Parker). It is beyond its natural range in Shropshire, and is likely to have been planted.

***Salix repens* L.**

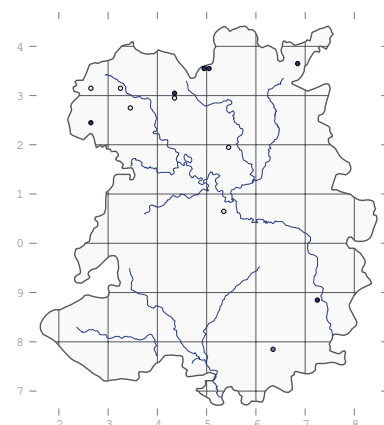
**Creeping Willow**

Native. Rare. Decreasing. Axiophyte: bogs.

First record (as *S. argentea*): J.E. Smith, c. 1800, 'bog by the side of the canal near the Queen's Head turnpike.'

Very rare on peat bogs, with recent records only from Betton Moss (three plants at SJ6836, A.P. Bell, 2001) and Marl Allotment on Whixall Moss (SJ500357), where there is a sizeable patch in M27 *Filipendula ulmaria* mire at Marl Allotment. It was also present at Crose Mere until recently (A. Hearle, 1989).

Elsewhere it is presumably an introduction, at Chelmarsh Reservoir (SO727884, A.K. Thorne, 2001) and Llynclys Quarry (SJ2624, Thorne, 2006).



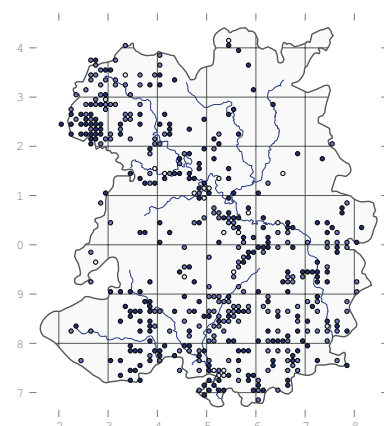
**Violaceae**

***Viola odorata* L.**

**Sweet Violet**

Native. Widespread. Stable. Hedges, woodland, scrub and churchyards.

First record: Williams, c. 1800, 'ditch banks, common.'



In open woodland, hedges and scrub on slightly calcareous soils, often on slopes or in rather dry but humid conditions. It also grows on shady roadside banks and



## Vascular plants

in churchyards where it may often have been introduced. It is occasional in W8 *Fraxinus excelsior* woodland and scrub, as on a roadside at Albrighton; W10 *Quercus robur* woods in places like Cole Mere; and in W24 *Rubus fruticosus* hedges at Pentre Hodre. Both the white-flowered and the purple-flowered forms occur in abundance at Laundry Terrace, near Shrewsbury, carpeting the ground in places.

### *Viola* × *scabra* F. Braun (*odorata* × *hirta*)

Native. Rare. Last recorded in 1923. Woods.

Just five records: at Craig Sychtyn (E.F. Jones, 1869), Benthall Edge and Shifnal (both W.H. Painter, 1896, SHYB), Longville in the Dale (A. Ley, conf. E.S. Gregory, 1904, BIRM) and Wenlock Edge (J.C. Melvill, 1923). All these sites are probably W8 *Fraxinus excelsior* woods on base-rich soils, which is where it might be expected.

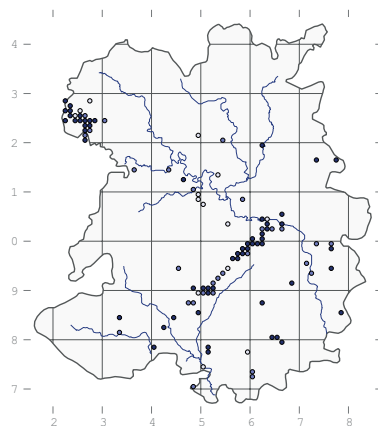
### *Viola hirta* L. Hairy Violet

Native. Local. Stable. Axiophyte: quarries, grassland, hedgebanks.

First record: Williams, c. 1800, 'pastures.'

In calcareous habitats, especially old limestone quarries. It is recorded in

CG3 *Bromopsis erecta* in Ballstone and Lea quarries; CG7 *Thymus polytrichus* in Lilleshall Quarry; MG5 *Festuca rubra* at Llynclys Hill, Oretton and Windmill Hill; and W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981) and Craig Sychtyn.

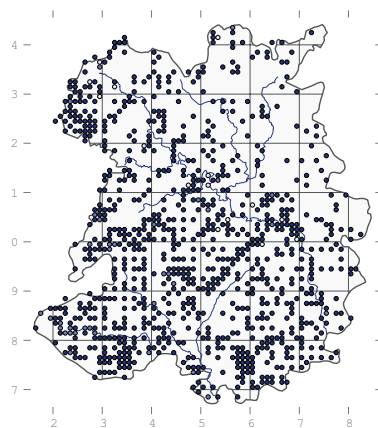


### *Viola riviniana* Reichb.

#### Dog-violet

Native. Widespread. Stable. Hedges, woods, grassland, waste ground.

First record (as *V. canina* var. *alba*): Leighton, 1834, near Radbrook.



A colonist of bare ground, tolerating some shade but not much competition from other herbs, so it is occasional in woods and hedgebanks where there is not a dense ground cover. As a perennial it cannot withstand ploughing, but it is found on waste ground, in quarries and in scrubby corners of fields. It is very common in dry, open grassland swards such as CG3 *Bromopsis erecta* at Lea Quarry; CG10 *Helianthemum nummularia* on Llynclys Hill and at Horseditch (D.H. Wrench, 1994); MG5 *Festuca rubra* grasslands throughout the county; and U1 *Rumex acetosella* grassland at Attingham Park and Earl's Hill.

In damper situations, it is recorded in M22 *Juncus subnodulosus* at Morton Pool (Trueman, 1981) and Sweeny Fen; in M23 *Juncus effusus* at Brook Vessons; W6 *Salix* × *fragilis* at Cole

Mere; in all stands of W8 *Fraxinus excelsior* woodland; and in W10 *Quercus robur* at Haughmond Abbey.

The var. *minor* (Murb. ex Greg.) Valentine has been noted by B.R. Fowler at Longnor (1908) and by M.E. Roberts at Oswestry (1990).

### *Viola* × *bavarica* Schrank (*reichenbachiana* × *riniviana*)

Recorded just twice in the county, both times in W8 *Fraxinus excelsior* woods, firstly at Craig Sychtyn (E.D. Pugh & P.M. Benoit, 1979) and secondly Plowden Woods (SO384865, J. Clayfield, conf. C. O'Reilly, BIRM).

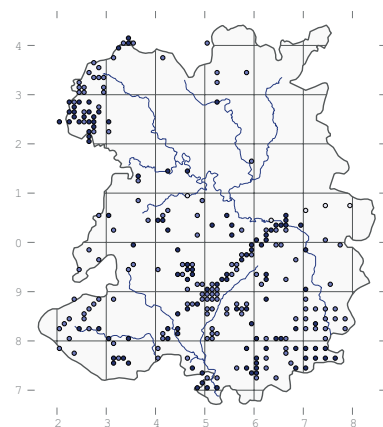
### *Viola reichenbachiana* Jordan ex Boreau

#### Early Dog-violet

Native. Local. Stable. Axiophyte: calcareous woodlands.

First record: F. Westcott, 1842, Ludlow.

Largely restricted to W8 *Fraxinus excelsior* woodland and hedgebanks in places such as Craig Sychtyn (R.A. Dawes, 2000), Earl's Hill and Sodylt Wood; and W9 *Sorbus aucuparia* woodland in Betchcott Hollow.



### *Viola canina* L.

#### Heath Dog-violet

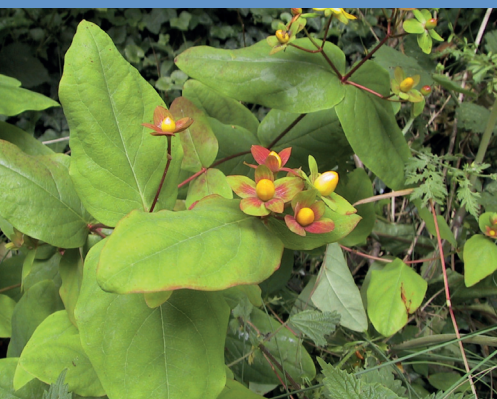
Native. Rare. Decreasing. Axiophyte: grass-heath.

First record (as *V. canina* var. *flavicornis*): Leighton, 1841, Twyford Vownog.

In lowland heaths and drying mires such as Betton Moss (SJ681362, A.P. Bell, 2001) and Prees Heath, where it grows in some abundance in U1 *Rumex acetosella* grassland (first recorded here by A.H. Wolley-Dod in 1900). There are older records from Penylan Lane (T. Salwey, 1877, CGE), Ellerdine Heath (E.B. Benson, 1901, SHYB), and Attingham Deer Park (E.M. Rutter, 1955, conf. S.M. Walters, SHY).



*Viola canina* at Prees Heath



*Hypericum androsaemum*

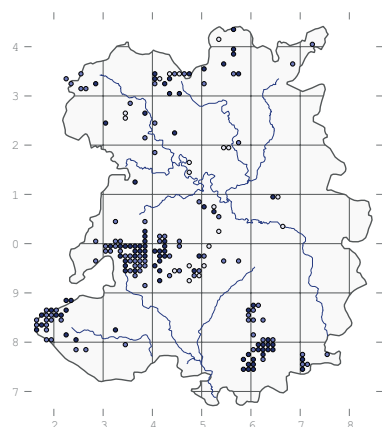
***Viola palustris* L.****Marsh Violet**

Native. Local. Decreasing. Axiphyte: grassland, flushes and mires.

First record: A. Aikin, 1796, Alkmund Park.

On peaty soils around the meres and mosses, often in light woodland, and in flushes and wet grassland on the hills.

It is recorded in M6 *Carex echinata* on the Stiperstones and Stapeley Hill (both Trueman, 1981); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* at Rhos Fiddle, the Mere (Trueman, 1981) and the Stiperstones; M25 *Molinia caerulea* at Black Coppice; M27 *Filipendula ulmaria* at the Mere; S27 *Comarum palustre* at the Mere; U5 *Nardus stricta* grassland on Titterstone Clea (A.K. Thorne, 1999); W1 *Salix cinerea* at the Mere; W5 *Alnus glutinosa* at Oss Mere, Sweat Mere (J.R. Packham, 1970); and W7 *Lysimachia nemorum* at Brook Vessons.

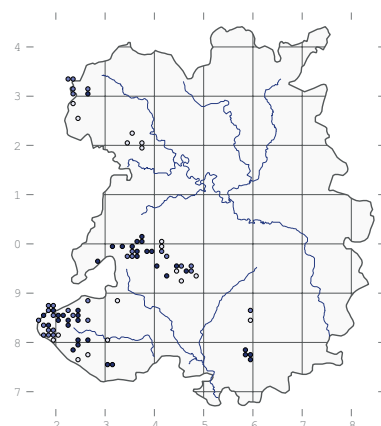
***Viola lutea* Hudson****Yellow Mountain Pansy**

Native. Local. Decreasing. Axiphyte: unimproved acid grassland.

First records: Williams, c. 1800, 'hills about Shelve, Bishops Castle, Bettws and all parts of the Hundred of Clun; on the right-hand side of the road between Nesscliffe and Knockin Heath; var. with blue flowers about Shelve and near Knockin Heath; var. with whitish flowers near Knockin Heath.'

Once abundant in fields on all the hills in the west of the county and even on lowland heaths, but now it is rare to find more than a couple of dozen plants in the unimproved fields that remain. Plants in Shropshire are all yellow-flowered now except at Rhos Fiddle, where there are purple ones (D.M. Young, 2002). In a few places there are still large populations, notably on the summit of Titterstone Clea (J. Bingham, 2008), on the Long Mynd Golf Course (P. Carty, 2008), on the north end of Stapeley Hill (J. Clayfield,

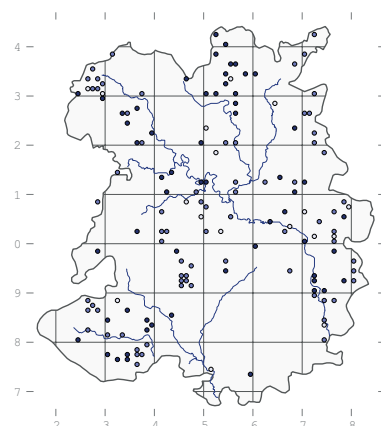
2007) and at Rigmores Oak. Trueman & Cohn (2006) studied its ecology on the Stiperstones and found it to be largely restricted to U4 *Agrostis capillaris* on slopes with a NW aspect. Upland: up to 525 m on Titterstone Clea (SO593778, J. & D. Bingham, 2005) and in the past as low as 80 m above sea level near Knockin Heath.

***Viola tricolor* L.****Wild Pansy**

Native. Local. Stable. Axiphyte: grassland, arable fields and heaths.

First record: Williams, c. 1800, 'sandy pastures, common.'

A plant of sandy arable fields and disturbed ground along tracks and roadsides. It is now recorded mainly in the heathy areas around around Prees Heath and Ruyton-XI-Towns, and along the valley of the Severn. Here it is often found on field margins and track sides, rather than as a weed amongst crops, and it is usually quite rare. It also grows on roadsides in towns, where it is sometimes a garden escape. Plants in Shropshire are *V. tricolor* ssp. *tricolor* Drabble.

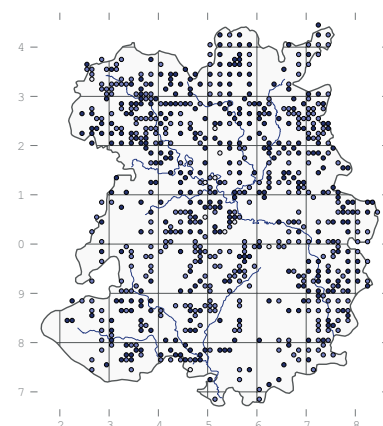
***Viola arvensis* Murray****Field Pansy**

Native. Widespread. Stable. Arable fields and waste ground.

First record: Leighton, 1841, 'cornfields, common.'

In arable fields, in margins or amongst the crops. Although it is often a diminutive plant, no more than a few centimetres high, it sometimes grows much taller when competing for light. Plants in a field of rape at Longslow in June 2009 had stems 64 cm tall.

It has been recorded in OV10 *Senecio vulgaris* in fields at Eudon George and Welshampton (Trueman, 1981); OV13 *Capsella bursa-pastoris* on a road verge at Priorslee (Trueman, 1981); OV14 *Urtica urens* in a field at the Sands; and OV15 *Anagallis arvensis* at Filletts Farm.

**Linaceae**

[*Linum bienne* Miller, Pale Flax

Recorded at Church Stretton (G.H. Griffiths, c.1870) and Pant (T.P. Diamond 1891). In 1961 it was reported at Venus Pool by E.M. Rutter, but the specimen at SHY was later redetermined by Sinker as *L. usitatissimum*.]

***Linum usitatissimum* L.****Flax**

Neophyte. Scattered. Stable. Arable fields and roadsides.

First record: E. Lees, 1841, 'in a wild lane near Coalbrookdale.'

Frequently grown as an arable crop and occasionally turning up as a casual on field edges or roadsides. There are recent records for the newly-constructed Nesscliffe bypass in 2003, a roadside at Horsehay (G. Halliday, 2010) and a field edge at Kinlet Park.

[*Linum perenne* L., Perennial Flax

Recorded at Little Wenlock, Onibury, Totterton and Welbach in Leighton's Flora (1841), at Wyke in Hamilton's (1909), and at Plaish and Shrewsbury in Sinker's (1985). None of the records is confirmed and they have here been changed to *L. usitatissimum*.]

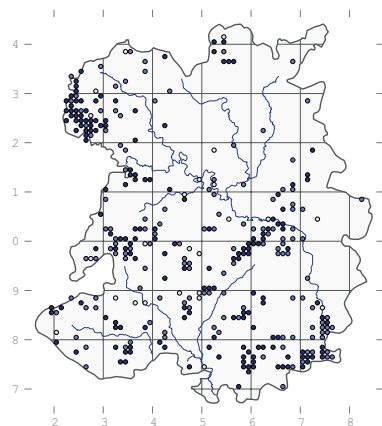
## *Linum catharticum* L.

### Fairy Flax

Native. Local. Decreasing. Axiophyte: grassland and flushes.

First record: Williams, c. 1800, 'pastures and ditch-banks.'

Frequent in calcareous grassland such as CG2 *Avenula pubescens* at Craig Sychtyn, Llyncllys Hill and other places on the limestone in the north-west; CG3 *Bromopsis erecta* at Hilltop, Lea Quarry and ther sites on Wenlock Edge; CG7 *Thymus polytrichus* in Lilleshall Quarry; and CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981). It extends into the more base-rich MG5 *Festuca rubra* swards at Hilltop, Nantmawr (Trueman, 1981) and Windmill Hill, and it is recorded in MG8 *Caltha palustris* grassland at Morton Pool. At Shirlett Gutter and Trefonen Marshes (both Trueman, 1980-81) it grows in M10 *Carex dioica* flushes. In contrast to these, it is also found in dry U1 *Rumex acetosella* grassland on Prees Heath.



## *Radiola linoides* Roth

### Allseed

Native. Rare. Last recorded in 1939. Heaths and bare ground.

There are records for Shawbury and Uckington heaths (Williams, c. 1800), Rudge Heath (H. Bidwell, conf. Leighton, 1841), Gravenhunger (R. Garner, 1844), Shawbury Heath again (Beckwith, 1882), Priors Halton and Poughnhill (A.W. Weyman, 1909) and Haughmond Abbey (J.B. Johnson, 1939).

## Hypericaceae

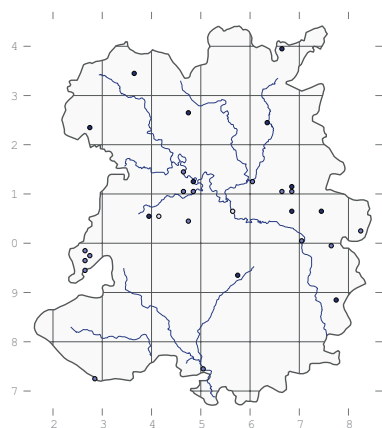
### *Hypericum calycinum* L.

#### Rose-of-Sharon

Neophyte. Scattered. Stable. Gardens, woods, walls and waste ground.

First record: Beckwith, 1880, 'quite naturalised near Eytton Rock.'

A barely naturalised shrub from south-east Europe, grown for many years as a garden plant and occasionally becoming established in the wild from garden throw-outs. It does not reproduce from seed. Most records are of plants established in quarries or spreading on waste ground, but some people record it in churchyards and on road verges where it has simply spread from adjacent gardens. There are few records of it in the same place twice, so it seems that populations are probably short-lived. G.C. Druce reported that the first county record was published in Gardener's Chronicle in 1864, but we have not traced that article.



### *Hypericum kouytchense* H.

Lév.

Neophyte. Rare. Increasing. Gardens and walls.

First record: M. Spencer, 2010, naturalised on a wall in Pig Trough, Shrewsbury (det. N.K.B. Robson, BM)

A native of China, where it grows on mountain rocks above 1,500 m; it is also an increasingly popular garden plant now available from numerous suppliers. At Pig Trough (SJ489134) it was found to be self-sown on walls – the first time it has been recorded as naturalised in Britain.

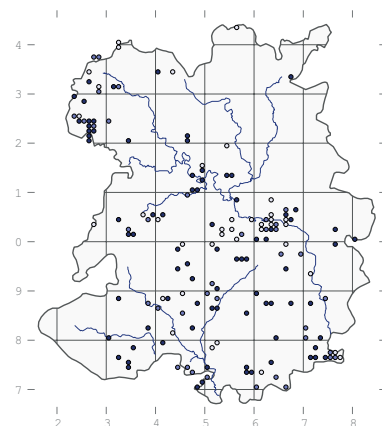
### *Hypericum androsaemum* L.

#### Tutsan

Native. Local. Stable. Woods.

First record: 'a Student in Physick' (L. Brown), 1727, 'in a wood at Old Church Moor, Lydbury North.'

Although this is a native plant in woods in western parts of Britain, it is also widely grown in gardens and it is widely established beyond its range, so it is not useful as an axiophyte. The map suggests that it has some affinity for base-rich woods, and it has been recorded recently in such places as Farley Dingle (A.K. Thorne, 2003), Jones's Rough, Harton Hollow and Lyd Hole. It is sometimes planted in churchyards and has been found established on the walls of the Severn in Shrewsbury. We have insufficient information to describe its ecology or to attempt to describe its native distribution in the county. A good place to start might be in the Wyre Forest, where it was recorded in about 1841 by W.G. Perry on 'rocks on the Shropshire side of the Dowles Brook' and where it is still present (J. Bingham, 1993).



### *Hypericum × inodorum*

Miller (*androsaemum* × *hircinum*)

#### Tall Tutsan

Recorded as a garden throw-out at Nills Hill Quarry (2003) and well established along forestry rides in Longdon Wood (J. Bingham, 2005).

### *Hypericum hircinum* L.

#### Stinking Tutsan

One plant in scrub by the lane to Oteley Hall, Ellesmere (SJ410342, R.M. Stokes, 2001, BIRM).

### *Hypericum perforatum* L.

#### Perforate St John's-wort

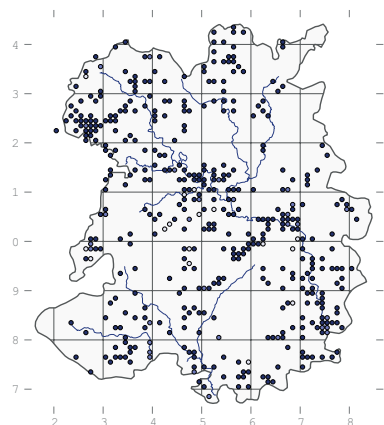
Native. Local. Stable. Grassland, scrub and woodland.

First record: Williams, c. 1800, 'hedges, woods and thickets, common.'

Occasional in grassland and on hedgebanks on the more base-rich soils throughout the county. It is frequent in CG2 *Avenula pubescens* on Llanymynech Hill, in CG3



*Bromopsis erecta* at Lea Quarry and Hilltop Meadow (D.H. Wrench, 1994) and in CG7 *Thymus polytrichus* in Lilleshall Quarry. At Sweeny Fen it was recorded in M22 *Juncus subnodulosus* by A. Hillman in 1992. On many roadside verges it occurs in MG1 *Arrhenatherum elatius*, especially in the MG1e *Centaurea nigra* subcommunity, as on Windmill Hill, and it also grows in MG5 *Festuca rubra* there and in MG10 *Holcus lanatus* at Brown Moss. As a colonist of disturbed ground, it was found in OV19 *Tripleurospermum inodorum* vegetation on a road verge at Tong by Trueman in 1981; and at Lilleshall Quarry and Prees Heath it grows in U1 *Rumex acetosella*. In more shady situations, it is recorded in W24 *Rubus fruticosus* scrub on waste ground in Ironbridge (Trueman, 1981), in W5 *Alnus glutinosa* woodland at Oss Mere, in W6d *Sambucus nigra* near Shrewsbury Castle and in W8 *Fraxinus excelsior* on Llyncllys Hill.



***Hypericum × desetangsii***  
Lamotte (*perforatum* × *maculatum*)  
**Des Étangs's St John's-wort**

Native. Local. Stable. Grassland and scrub.

First record: P.M. Benoit, 1971, Craig-llwyn (conf. N.K.B. Robson, BM). (NB, this was considered by Benoit to be the second county record.)

In base-rich grassland throughout the county. The only vegetation community it has been recorded in is CG3 *Bromopsis erecta* in Lea Quarry, but it is not restricted to this habitat. Other places it has been recorded in recently include a patch of calcareous grassland on the SE side of Earl's Hill, Windmill Hill, Cuckoopen Coppice (I.P. Green, 2009), Willey Furnace and Bringewood Chase (T.C.G. Rich, 2011).

***Hypericum maculatum***  
**Crantz**

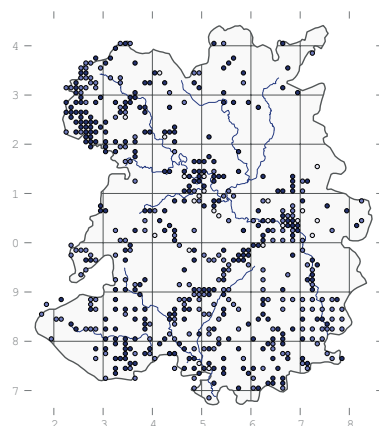
**Imperforate St John's-wort**

Native. Widespread. Stable. Grassland, scrub, roadsides and river banks.

First records (as *H. dubium*): Williams, c. 1800, 'hedges, thickets and borders of fields, not uncommon about Eaton Mascot, Albrightlee, etc.'

In a range of habitats, often but not exclusively on base-rich soils and usually with a degree of disturbance. It is recorded in CG2 *Avenula pubescens* in Dolgoch Quarry; CG3 *Bromopsis erecta* in Lea Quarry; and H8 *Ulex gallii* at Prees Heath; M15 *Trichophorum germanicum* at Cramer Gutter (Sinker, 1979); MG1e *Centaurea nigra* in Ropewalk Meadow; MG5 *Festuca rubra* at Hilltop, Llyncllys Hill and Pudding Bag; S18 *Carex otrubae* by a woodland pond at the Speller; W6d *Sambucus nigra* on a river bank at Shelton Rough; and W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981).

The subspecies *obtusiusculum* (Tourlet) Hayek has been recorded many times, but not ssp. *maculatum*. It is a lowland plant, recorded up to about 270 m in Tankerville Hollow (SO356994, 2007) or possibly over 325 m at Bog Farm (SO3598, J.A. Warren, c. 1980).



***Hypericum tetrapterum***  
**Fries**

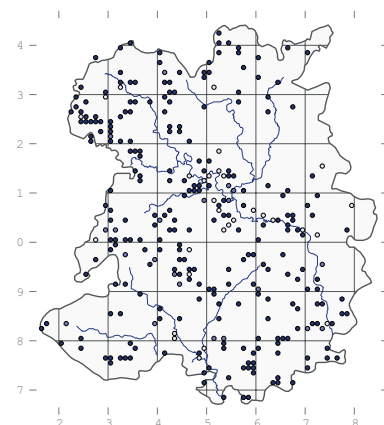
**Square-stalked St John's-wort**

Native. Widespread. Stable. Pools, riverbanks, canal sides, marshes and damp grassland.

First record: Williams, c. 1800, 'sides of pools and thickets in moist situations, not uncommon.'

Most typical of M22 *Juncus subnodulosus* in places like Crose Mere (Wigginton, 1979), Sweeny Fen and Trefonen Marshes (Trueman, 1981); in a flush at Brown's Corner it was recorded in MG10 *Holcus lanatus*

(Trueman, 1981); and at Morton Pool (Hillman, 1993) and Ruewood Pastures (Trueman, 1980) it grows in MG8 *Caltha palustris*. There are also records of it in OV32 *Ranunculus sceleratus* on the shore of White Mere; in S12 *Typha latifolia* around Berrington Pool; and in S3 *Carex paniculata* swamp at Fenemere (C. Walker, 1988). It is a lowland plant, often found along the banks or canals or rivers, but reaching 425 m or more in flushes in Gatten Plantation (A.K. Thorne, 2003).

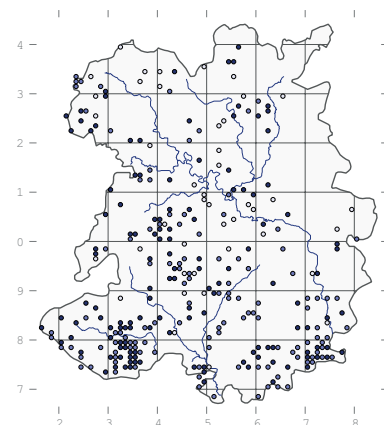


***Hypericum humifusum* L.**  
**Trailing St John's-wort**

Native. Local. Stable. Axiophyte: grassland, woodland and bare ground.

First record: Williams, c. 1800, 'pastures and ditch-banks.'

Occasional on rather acidic, often winter wet soils. At Attingham Park it grows in U1 *Rumex acetosella* grassland in the deer park, and at Hope Coppice it is recorded in W10 *Quercus robur* woodland. Sometimes it occurs on disturbed soils, as on a cornfield margin near Hencott Pool (B.J. Laney, 2008). In 1930 G. Potts recorded it 'in great quantity' in a recently cleared woodland near Wyke, but it is usually rather sparse. This leads to it being easily overlooked, and it is now known to be rather more widespread than in Sinker's Flora, but older records show that this is not due to a recent increase.



## *Hypericum linariifolium*

Vahl

### Toadflax-leaved St John's-wort

In the *Record of Bare Facts* for 1919, J.C. Melvill wrote: 'Division XII. In extremely small quantity, but unmistakably this rare species. It is the rarest of our native St John's Worts and restricted to the Southern Counties and Channel Isles. We can hardly imagine it anything but a casual here. It was discovered by Mr W.B. Allen, who was kind enough on 27<sup>th</sup> June last, to conduct me to the place where I beheld it *in situ*. Our joint diagnosis was confirmed by Mr Edmund G. Baker, of the Botanical Department, British Museum. For various reasons, the exact locality is not given.' The specimen is now apparently at the National Botanic Gardens of Wales (R.A. Jones, pers. comm.) where the label reveals the locality to be the railway cutting at Buildwas where Allen found numerous other exotic species.

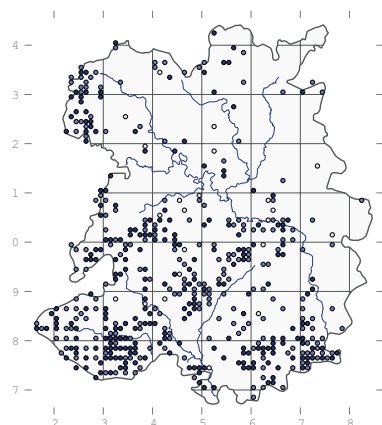
## *Hypericum pulchrum* L.

### Slender St John's-wort

Native. Local. Stable. Axiophyte: woodland.

First record: Williams, c. 1800, 'woods and thickets.'

In open woods and scrubby grassland, including CG2 *Avenula pubescens* and MG5 *Festuca rubra* on Llynclys Hill; W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981) and Stoke Wood; W10 *Quercus robur* at Bannister's Coppice; and W16 *Q. petraea* plantations at Oaks Wood and Withybed Wood (Trueman, 1981).



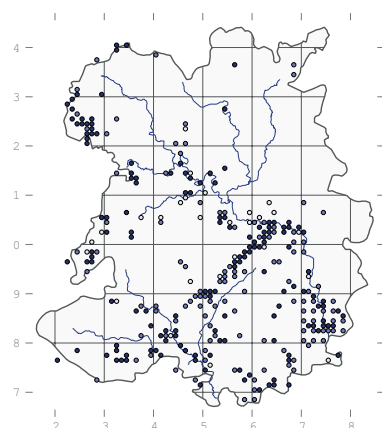
## *Hypericum hirsutum* L.

### Hairy St John's-wort

Native. Local. Stable. Calcareous grassland, hedges and scrub.

First record: Williams, c. 1800, 'shady lanes and ditch-banks.'

On base-rich, often disturbed soils on roadsides, in quarries, by woodland paths and on river banks. It is abundant in CG3 *Bromopsis erecta* in Lea Quarry; and has been recorded in MG1c *Filipendula ulmaria* on a hedge bank at the Speller and open W8 *Fraxinus excelsior* woodland at Stevenshill. It is common on Wenlock Edge and in other limestone areas such as Llanymynech and Llynclys Hill. Lowland: up to 245 m at Hilltop.

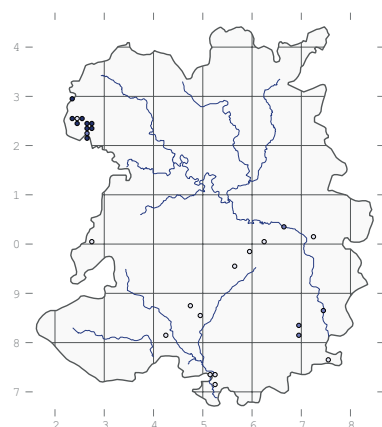


## *Hypericum montanum* L.

### Pale St John's-wort

Native. Scarce. Stable. Axiophyte: calcareous grassland.

First record: Littleton Brown, 1726, 'on ye right hand side of ye road between Corfton and Munslow.'



Now restricted to the limestone in the north-west, but formerly it was also along Wenlock Edge and in other limestone areas such as around Knowbury. It has a strong affinity to quarries and it was in the past recorded along roadsides in otherwise unsuitable areas such as at Hockleton (W. Phillips,

1899). At Blackbridge Quarry it grows in CG2 *Avenula pubescens* and at Blodwel Rock it was recorded in open W8 *Fraxinus excelsior* scrub (Trueman, 1981). It is currently recorded in six sites: Blackbridge Quarry, Blodwel Rock, Butcher's Quarry (A.K. Thorne, 2006), Craig Sychtyn (F. Gomersall, 2007), Craig-y-rhiw (Thorne, 2010) and Llynclys Hill (J. Pedlow, 2007). Generally lowland, up to about 340 m at Craig-y-rhiw (SJ238295, Thorne, 2010).

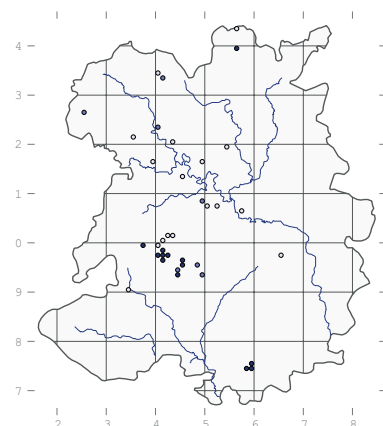
## *Hypericum elodes* L.

### Marsh St John's-wort

Native. Scarce. Declining. Axiophyte: bogs and flushes.

First record: Littleton Brown, 1725, 'in ye great bog on Lyddum's heath.'

In shallow, clean water in full sunlight. It occurs on the margins of lowland meres and in flushes on the hills, in places where there is some base enrichment. At Brown Moss it was recorded in S27 *Comarum palustre* (Trueman, 1983) and on Wild Moor it occurs in M29 *Potamogeton polygonifolius* flushes. There are recent records for it at Brown Moss, the Long Mynd, the Stiperstones (A.K. Thorne, 2002) and Titterstone Clee (J. Bingham, 2010).



## Geraniaceae

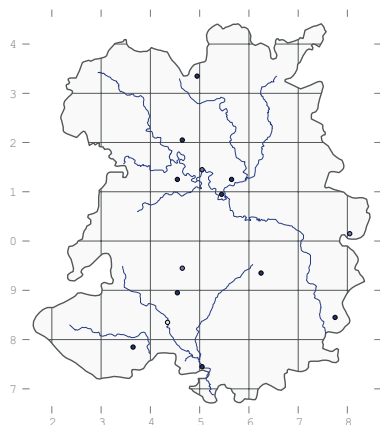
### *Geranium endressii* Gay

#### French Crane's-bill

Neophyte. Scattered. Increasing. Gardens, roadsides and churchyards.

First record: E.H. Gilchrist de Castro, 1906, Halford.

Occasional on roadsides as a garden throw-out, rarely persisting. There are recent records of it by the Prees Branch Canal, on Whitcliffe Common, at Atcham, Monkhopton and Birdsgreen. At Acton Scott it is naturalised in the churchyard (W.A. Thompson, 2000).



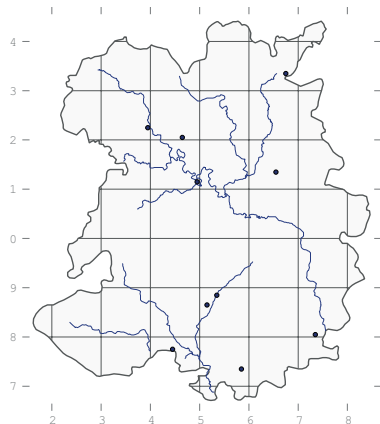
***Geranium × oxonianum* Yeo**  
(*endressii* × *versicolor*)

**Druce's Crane's-bill**

Neophyte. Scattered. Increasing.  
Roadsides.

First record: J. Martin, 1989, 'on a grassy verge, Ruyton-XI-Towns'.

Occasional on roadside verges as a garden throw-out, rarely persisting.



***Geranium nodosum* L.**

**Knotted Crane's-bill**

Neophyte. Rare.

Naturalised along a lane near Benthall Hall since at least 1967 (S.R. Turner) and possibly since 1877 (Hayes or Bloxam, BIRM) and still present (S. O'Donnell, 1995). Also recorded in old Rectory Wood in 1969 (C.M. & J.G. Dony, LTN).

***Geranium versicolor* L.**

**Pencilled Crane's-bill**

Neophyte. Scarce. Increasing. Gardens and roadsides.

First record: O.M. Feilden, 1910, Badger (Record of Bare Facts 20, 1911).

By the towpath of the Severn at Castlefields (SJ497129, C.D. Preston, 1998) and recently recorded on Oswestry Racecourse, at Llanhowell, Hopes Wood on the Long Mynd and Welsh Frankton.

***Geranium rotundifolium* L.**

**Round-leaved Crane's-bill**

Native. Rare. Increasing. Hedges and waste ground.

First record: Leighton, 1847, Belle Vue.

Native in the south of England but spreading northwards in recent decades. It was first recorded erroneously by John Evans (in Turner & Dillwyn, 1805) as 'common about Shrewsbury', but Leighton later grew it in his garden at Luciefelde House, from where it escaped onto nearby roadsides and waste ground, and was still there long afterwards (D.M. Evans & M.J. Connell, 1973). In 2004 it turned up in a roadside hedge at Monkmoor Farm (SJ521140, Whild, BIRM), which is its first natural appearance.

***Geranium sylvaticum* L.**

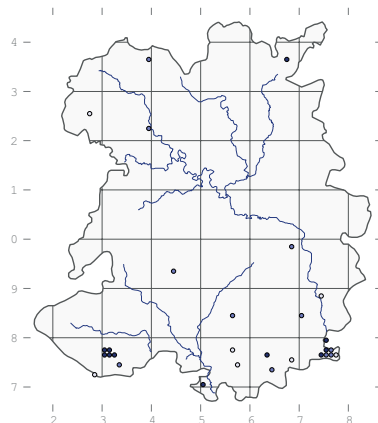
**Wood Crane's-bill**

Native. Scarce. Stable. Axiphyte: woods and hedgebanks.

First record: Williams, 1786, Kinsley Wood.

Well known in the Wyre Forest, where it has been recorded since 1841 (G. Jordan) and it could be native, but the evidence is mixed. Other sites tend to be on woodland edges and roadsides, as at Brineddin Wood (J.M. Roper, 1978), Chorley Covert (W.A. Thompson, 1981) and Hobarris Wood (Roper, 1976). These are small populations which are probably garden escapes.

A good site for it is at Hopton Wafers churchyard (Williams, c. 1800 - J. Bingham, 1994). Other recent sites for it include roadsides at Pentre Hodre, Ashford Bowdler (R. Shoubridge, 2007) and Bettonwood.



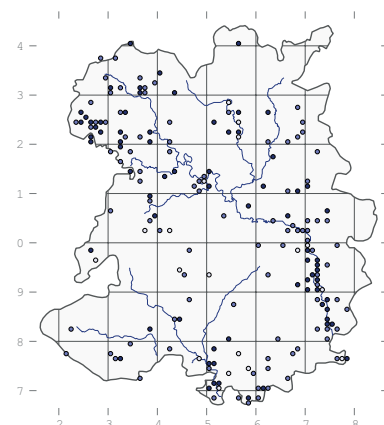
***Geranium pratense* L.**

**Meadow Crane's-bill**

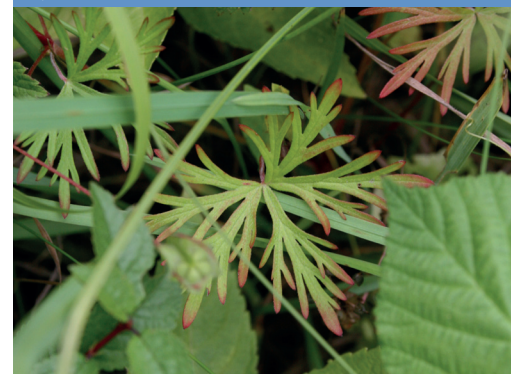
Native. Local. Stable. Riverbanks and roadsides.

First records: Williams, c. 1800, 'meadows about Bitterley, Ashford Carbonel, Burford and Burraston. Banks of the Severn opposite Apley, etc.'

Occasional on riverbanks and grassland in the floodplain of most of the lowland rivers; also widely grown in gardens and often planted or naturalised on road verges near houses. It occurs in rank grassland rather than species-rich meadows, and its phytosociology has not been studied. Good places to look for it include by the Severn at Bridgnorth (first recorded here by Beckwith in 1880) and Hampton Loade (Phillips, 1892) or by the Teme at Burford (still there in 1995: S. O'Donnell).



*Erodium maritimum* on the Long Mynd



*Geranium columbinum* leaf



## *Geranium* × *johnsonii* P.D. Sell (*pratense* × *himalayense*)

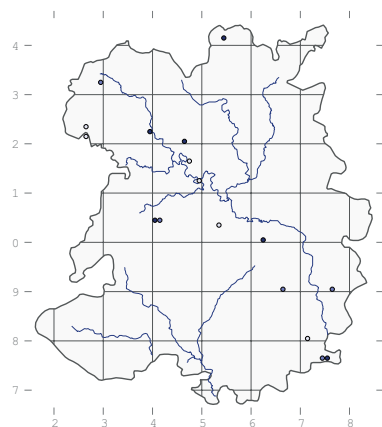
Occasional as a garden throw-out, at Merrington Green and by the Llangollen Canal at Adderley. Doubtless planted at both locations.

## *Geranium sanguineum* L. Bloody Crane's-bill

Native. Scarce. Increasing. Axiophyte: limestone grassland and woods.

First records: Dovaston, Blodwel Rock and Llanymynech Hill; and G. Jordan and W.G. Perry, Wyre Forest (all in Leighton 1841).

Widely introduced as a short-lived garden escape, but probably native in the Wyre Forest and Earl's Hill (Sinker, 1958 – A.K. Thorne, 2002). It has been recorded as an introduction since at least 1869, when W. Phillips collected specimens at Leaton Knolls and Shrewsbury. It has not been recorded twice at any of its introduction sites, which suggests that it does not persist. At both its current sites it in W8 *Fraxinus excelsior* woodland, although this may not be a favourable habitat for it.



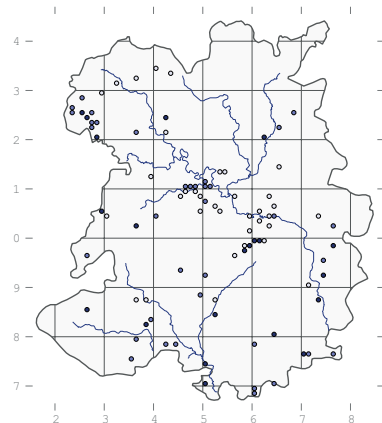
## *Geranium columbinum* L. Long-stalked Crane's-bill

Native. Scattered. Stable. Axiophyte: waste ground, roadsides, limestone grassland.

First record: Williams, c. 1800, 'ditch-banks, pastures and clover fields in a gravelly soil.'

A colonist in abandoned limestone quarries such as Lea and Coates (A.K. Thorne, 1990) on Wenlock Edge and Llyncllys Quarry (E.D. Pugh, 1964 and Thorne, 2006). It also occurs on bare patches in calcareous grassland such as at Bryn Celyn (Pugh, 1983 and G.M. Stone, 1996). Although it has a scattered distribution throughout the county, it has been known in certain areas for long periods of time; for example, before Lea Quarry was excavated, it was known at Lea

farm by W.P. Brookes in the mid-19<sup>th</sup> century. There is a cluster of dots south of Shrewsbury, around Meole Brace (Melville, 1910) Pulley and Redhill (both Leighton, 1841) where it has not been recorded for some time. Lowland: up to about 225 m in Blakeway Hollow.

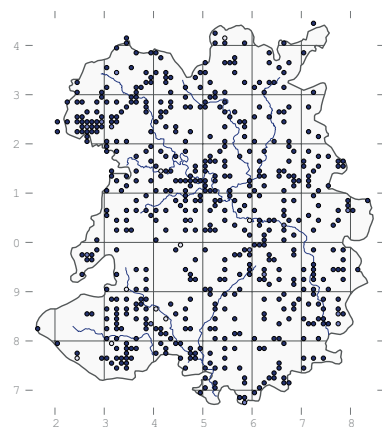


## *Geranium dissectum* L. Cut-leaved Crane's-bill

Archaeophyte. Widespread. Stable. Field margins, roadsides, waste ground.

First record: Williams, c. 1800, 'ditch banks and gravelly pastures.'

On disturbed soil, typically field margins or track sides, but also in more natural habitat such as bare patches of semi-natural grassland or open scrub. It has been recorded in MG1 *Arrhenatherum elatius* grassland on Wenlock Edge; MG5 *Festuca rubra* at Bomere Pool; and U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005), Lilleshall Quarry and Prees Heath. On disturbed soils it has been recorded at Faintree in OV10 *Senecio vulgaris* in an arable field; on a roadside verge at Tong in OV19 *Tripleurospermum inodorum* (Trueman, 1981); and at Buildwas Sand Quarry in OV22 *Taraxacum officinale* (Trueman, 1982). On Blodwel Rock, Trueman (1981) found it in W8 *Fraxinus excelsior* scrub.



## *Geranium* × *magnificum*

N. Hylander (*ibericum* × *platypetalum*)

## Purple Crane's-bill

Neophyte. Rare.

A garden escape, recorded at Stokesay Castle (J.A. Thompson, 1995) and along a track in Blakeway Coppice (R.M. Stokes, 1997).

## *Geranium pyrenaicum* Burm.f.

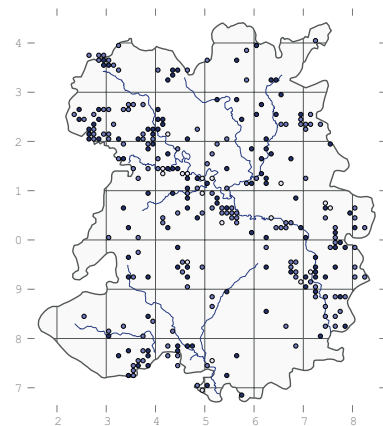
## Hedgerow Crane's-bill

Neophyte. Scattered. Increasing. Hedges.

First record: Williams, c. 1800, 'in a field adjoining Cound Rectory garden.'

Leighton (1841) considered this species rare enough to list localities, and commented that it occurred mainly on roadsides. Many records of it are indeed from roadsides, but it is also found in churchyards, gardens, along canal banks and on nature reserves.

It was widespread by the time of Hamilton's Flora (1909) and appears to be at least as common now. It is often found in MG1 *Arrhenatherum elatius* grassland and at the base of W21 *Crataegus monogyna* hedges.



## *Geranium pusillum* L.

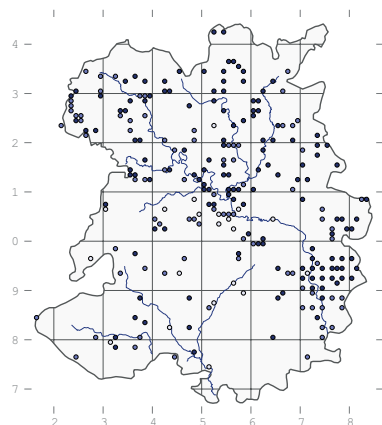
## Small-flowered Crane's-bill

Native. Local. Stable. Grassland, arable fields and rock outcrops.

First records: Williams, c. 1800, 'sides of roads and sandy ditch-banks about Cound, Eaton, Pitchford, etc.'

Occasional on sandy soils and on shallow soil over rocks or even concrete, as on the old airfield at Eaton upon Tern. It has been recorded in OV22 *Taraxacum officinale* on the ruins at Viroconium and OV24 *Urtica dioica* in trampled grassland on Abbot's Castle Hill (Trueman, 2005). Its main habitat is probably U1 *Rumex*

*acetosella* grassland in places like Abbot's Castle Hill (Trueman, 2005), Lilleshall Quarry and Prees Heath. It is also recorded along railway lines such as the Severn Valley Railway at Upper Forge (W.A. Thompson, 1981) and Sutton. Generally lowland, but found above 300 m at Craig-y-rhiw (2007) and above 400 m at The Knolls (M. Leonard & P.G. Green, 2007).



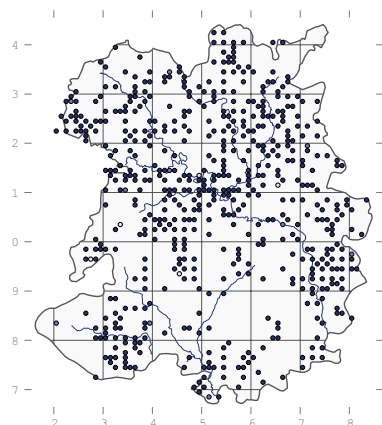
### *Geranium molle* L.

#### Dove's-foot Crane's-bill

Native. Widespread. Stable. Grassland, field margins, roadsides, waste ground.

First record: Williams, c. 1800, 'pastures and ditch banks in a sandy soil, common.'

In MG1 *Arrhenatherum elatius* grassland on road verges and the edges of tracks throughout; also growing in MG5 *Festuca rubra* on a species-rich road verge on Guilden Down. A typical habitat for it is in MG7e *Plantago lanceolata* on an eroded grassy bank at Rudge (Trueman, 1981). Trueman also found it in OV10 *Senecio vulgaris* and OV18 *Polygonum aviculare* communities in arable fields at Welshampton and Edgmond, respectively, in 1981. It is most frequently recorded in U1 *Rumex acetosella* in places like Abbot's Castle Hill (Trueman, 2005), Attingham Park, Prees Heath and Ryton Church, and this could be considered its native habitat. Lowland: up to about 250 m in Crowsnest Dingle.



### *Geranium macrorrhizum* L.

#### Rock Crane's-bill

Neophyte. Scattered. Increasing. Gardens, roadsides and stream banks.

First record: T.P. Diamond, 1907, 'near Oswestry'.

Widely planted in gardens, but usually fairly obviously planted if found on a roadside verge, and most recorders ignore it. There are recent records of it in Nills Hill Quarry (M.S. Duffell, 2008), where garden waste is frequently dumped; on road verges at Chirbury, Broadstone near Munslow and Clee St Margaret; and naturalised on a riverbank near Ditton Mill, far from any houses.

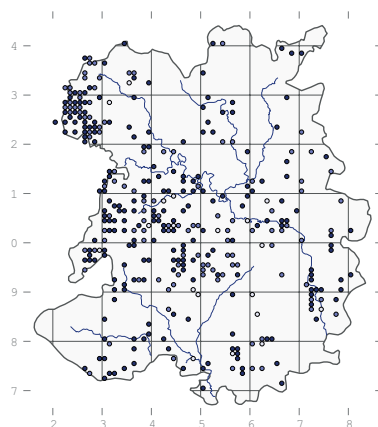
### *Geranium lucidum* L.

#### Shining Crane's-bill

Native. Local. Increasing. Hedge banks, scree, gardens.

First records: Williams, c. 1800, 'upon the rock on Ponsent Hill; amongst the loose stones on the S.E. side of the Wrekin near the top; ditch banks, walls and roofs of houses in Oswestry, Bitterley, Ludlow, Earl's Ditton, Silvington, Burwarton & Habberley; betw. Halston and Hardwick.'

Still present on the scree at Earl's Hill, where it grows in rather open W8 *Fraxinus excelsior* woodland. This is possibly its native habitat, but it is much more often found on hedge banks in similarly half-shaded situations below hedges of similar composition, on base-rich soils, nearly always near a village where it has most likely been introduced at some point, either deliberately or accidentally. Trueman (1981) recorded it in OV21 *Plantago major* in a garden in Pant, demonstrating its association with calcareous soils and disturbance. It is limited by soil type rather than altitude, with Williams's record of it on the Wrekin, c. 400 m, being the highest, although it has not been recorded there since.



### *Geranium robertianum* L.

#### Herb-robert

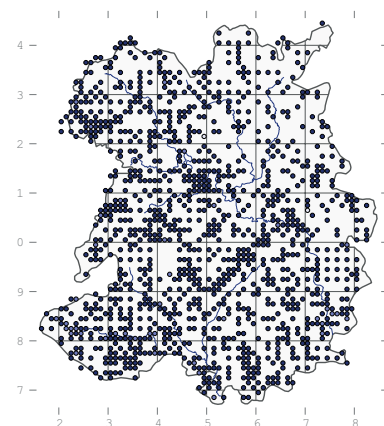
Native. Widespread. Stable. Woods, hedges and disturbed ground.

First record: Williams, c. 1800, 'ditch banks and walls, common.'

In all woods except the most upland, acid types, and one of the first colonists of secondary woodland and scrub. It is frequent in hedges and gardens and it often crops up on bare soil in places such as abandoned quarries and railway lines.

In woods it is rare in W4 *Betula pubescens*, being recorded only at Sweat Mere (Trueman, 1980); occasional on drier ground in W5 *Alnus glutinosa* in places like Cole Mere, Morton Pool (D.H. Wrench, 1991) and Sweat Mere; frequent in W6 *Salix × fragilis* at Blake Mere, Hencott Pool, Holly Coppice and elsewhere; W7 *Lysimachia nemorum* at Birchen Park, Fastings Coppice and elsewhere; and ubiquitous in W8 *Fraxinus excelsior* throughout the county, especially in the most common subcommunity, W8e *G. robertianum*, which is found in places like Earl's Hill, New England and Preston Rough. It also occurs in W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Haughmond Abbey Wood; and W24 *Rubus fruticosus* hedges at Pentre Hodre.

Outside woods it is recorded in calcareous grassland such as CG2 *Avenula pubescens* at Craig Sychtyn; CG3 *Bromopsis erecta* at Ballstone Quarry; in damp meadows such as MG10 *Holcus lanatus* at Hope Coppice; and OV26 *Epilobium hirsutum* tall herb near Bomere Pool. Although it is absent from the summits of Brown Clee, Titterstone Clee and the Long Mynd, this is due to habitat rather than altitude.

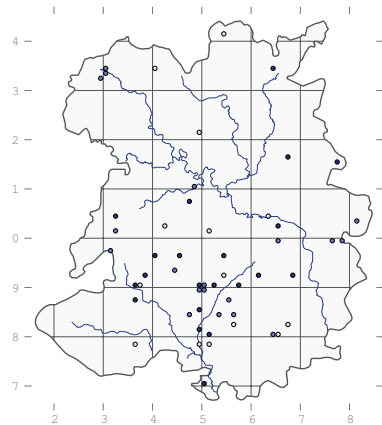


## *Geranium phaeum* L.

### Dusky Crane's-bill

Neophyte. Scattered. Stable. Road verges and hedges.

First record: Williams, c. 1800, 'hedges near Buildwas Church.'



Most records of this species are from churchyards, where it sometimes becomes very well established, as at Eaton-under-Heywood (SO4989 and the neighbouring 3 hectads) where it was first recorded in 1892 (G.R. Jebb & W. Beacall) and is still present (J.A. Thompson, 1998). Occasionally it is recorded in the vicinity of gardens, but it does not seem to spread into the wild or even far along road verges. Sinker (1985) considered it to be well established in woods and on the edges of meadows, but our observations do

not support that. For example, G. Potts reported that it had spread to Eaton Coppice on Wenlock Edge (SO5089) in 1935 but it has not been recorded there again. There has been no obvious change in its distribution or abundance over the last century or so.

*G. phaeum* var. *lividum* (L'Hér.) Pers. was found to be frequent on roadsides around Benthall Hall (SJ6502) in 1995 (S. O'Donnell).

## *Erodium maritimum* (L.)

L'Hér.

### Sea Stork's-bill

Native. Rare. Stable. Axiphyte: acid grassland.

First records: Williams, c. 1800, 'on the Morf near Bridgnorth in several places, particularly by the side of the road up the hill near the Hermitage; south end of the Wrekin.'

Only in U1 *Rumex acetosella* grassland, currently known in just two sites: the south end of the Long Mynd at Rabbit Warren (SO390875, J. Clayfield, 2007) where it was first recorded by M. McGhie sometime before 1841, and Abbots Castle Hill (SO813948, A. Ferguson, 2005). It might still be worth looking for around Bridgnorth, where it was last recorded by J.B. Duncan in 1916.

## *Erodium moschatum* (L.)

L'Hér.

### Musk Stork's-bill

Archaeophyte. Rare. Casual. Sandy bare ground and roadsides.

First record: A. Aikin, 1796, 'high-road between Bicton and Montford Bridge.'

An introduced annual weed from the Mediterranean region that is well established on the coast of Britain, where it grows in bare ground and sand dunes. In Shropshire it appears to be a casual of transport corridors. The recent records are for Gonsal Quarry near Condover (SJ485044, B.R. Fowler, 1980), on the eroded banks of the Severn at Weir Farm, Montford (SJ423143, 1998), and on a roadside at Sundorne (SJ512147, D.H. Wrench, 2006).

## *Erodium cicutarium* (L.)

L'Hér.

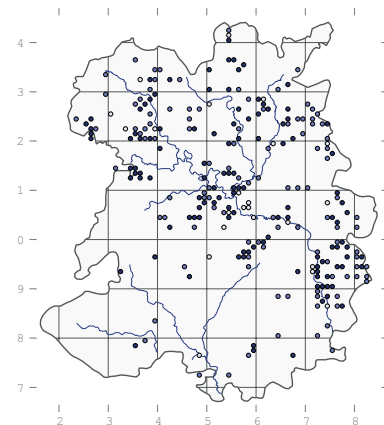
### Common Stork's-bill

Native. Local. Stable. Grassland.

First record: Williams, c. 1800, 'sandy pastures and ditch banks, common.'

An annual of sandy soil and dry limestone outcrops. It is recorded in CG3 *Bromopsis erecta* at Ippikin's Rock;

MG7e *Plantago lanceolata* at Rudge (Trueman, 1981); OV14 *Urtica urens* arable field margins at The Sands; and U1 *Rumex acetosella* in places like Abbot's Castle Hill (Trueman, 2005), Lilleshall Quarry and Prees Heath. Good places to look for it include Attingham Park (where it was first recorded by Perring in 1972), Boreton Bank (E.M. Rutter, 1955) and Bridgnorth Cemetery (Beckwith, 1880).



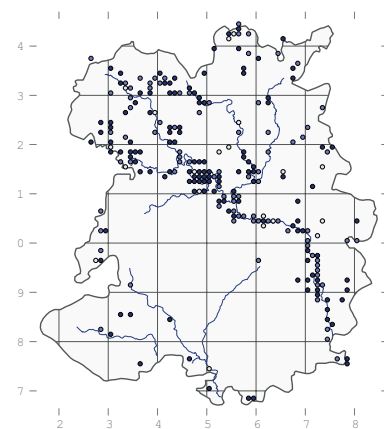
## Lythraceae

## *Lythrum salicaria* L.

### Purple Loosestrife

Native. Local. Stable. Rivers, canals and meres.

First record: E. Lhwyd, 1681, 'in ye ditches before you passe over Severn goeing to Breiddin Hill.'

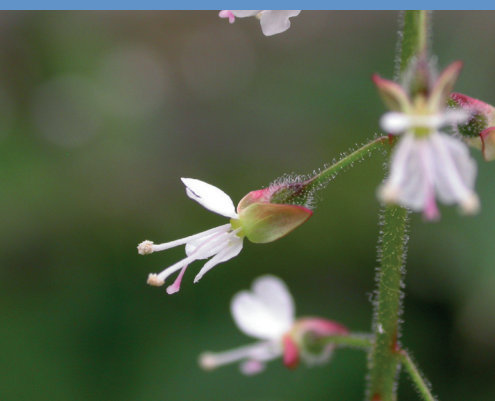


Occasional on the banks and floodplain of the Severn and other main rivers, usually in OV26 *Epilobium hirsutum* tall herb, as by the river opposite Shrewsbury Castle. On a gravel bank by the English Bridge it grows in OV30 *Bidens tripartita*, which is also its habitat at Marton Pool, Chirbury, and White Mere (both M.J. Wigginton, 1979), and it has been recorded in OV31 *Rorippa palustris* community on the margins of Fenemere (Wigginton, 1979).

It occurs in swamps around the meres, notably in S3 *Carex paniculata* at



*Epilobium hirsutum*



*Circaea lutetiana* (Dan Wrench)



Fenemere (C. Walker, 1988) and Sweat Mere (B.D. Wheeler, 1986); S6 *C. riparia* at Fenemere; S24 *Calamagrostis canescens* at Fenemere; and S26 *Phragmites australis* at Fenemere and Marton Pool, Chirbury (Wigginton, 1979). It is frequent in W5 *Alnus glutinosa*, as at Cole Mere, Fenemere (both Wigginton, 1979), Morton Pool (D.H. Wrench, 1991), Oss Mere and Sweat Mere (Trueman, 1980). At Fenemere and Morton Pool it persists in drier W6 *Salix* × *fragilis* woodland. It germinates in fairly open conditions, but as a perennial it can persist in fairly closed woodland for some time.

### *Lythrum hyssopifolia* L.

#### Grass-poly

Recorded as a casual in a garden at Arscott (SJ436084) by Miss C. Jones in 1968 (*Transactions*, 1973).

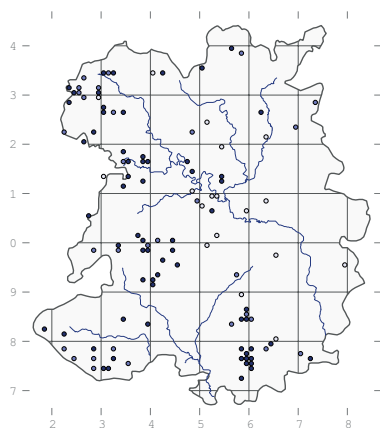
### *Lythrum portula* (L.) D. Webb

#### Water Purslane

Native. Local. Stable. Axiophyte: flushes and pond margins.

First record (as *Peplis portula*): Williams, c. 1800, 'moist heaths, common.'

In flushes and on the margins of acid, oligotrophic pools in the hills, occasionally, around the meres. It is recorded in M23 *Juncus effusus* on a lake margin on Brown Clee (Trueman, 1981) and in S14 *Sparganium erectum* swamp on Old Oswestry (Trueman, 1981; still there in 2008), but most populations are in the characteristic OV35 *Lythrum portula* community in places like Llyn Rhyddwyn (Trueman, 1981), and Newton Mere. It has decreased in the east of the county, largely as a result of drainage and agricultural improvement, but it is now rather better recorded in the uplands. It is not restricted by altitude, growing high on Stowe Hill (J. Clayfield), Titterstone Clee, the Long Mynd, the Stiperstones and Brown Clee (up to 531 m at SO593865, Whild & Trueman, 2011).



## Onagraceae

### *Epilobium hirsutum* L.

#### Great Willowherb

Native. Widespread. Stable. Riversbanks and wetland.

First record: Williams, c. 1800, 'sides of brooks, rivers and ditches, common.'

Common in all wetlands except in the most acid habitats. It can be particularly abundant in eutrophic conditions such as the banks of lowland rivers, but it is often present in less fertile situations. It is also found in arable fields, on waste ground and on walls.

It occurs in a wide variety of vegetation communities, including A8 *Nuphar lutea* at Betton Pool (Wigginton, 1979); MG9 *Deschampsia cespitosa* at Crose Mere; MG10 *Holcus lanatus* at Brown Moss and elsewhere; MG13 *Alopecurus geniculatus* at Fenemere; M22 *Juncus subnodulosus* at Sweeny Fen and Crose Mere; M23 *Juncus effusus* at Bomere Pool; M27 *Filipendula ulmaria* at Tunstall Wood and the Moors, Ellesmere; and M36 *Chrysosplenium oppositifolium* at Poles Coppice.

It is of course ubiquitous in OV26 *E. hirsutum* around meres and by rivers; and it is recorded in OV30 *Bidens tripartita* at Black Coppice and Marton Pool, Chirbury (Wigginton, 1979); OV31 *Rorippa palustris* at Brown Moss, Fenemere and Venus Pool; OV32 *Ranunculus sceleratus* at Crose Mere and by the Roden at Tilley; and OV35 *Lythrum portula* at Newton Mere.

In swamps it is found in S3 *Carex paniculata* at Fenemere (C. Walker, 1988) and Sweat Mere (B.D. Wheeler, 1986); S4 *Phragmites australis* at Sweat Mere (Wigginton, 1979); S7 *C. acutiformis* in the Old River Bed; S9 *C. rostrata* at Berrington Pool (Wigginton, 1979); S10 *Equisetum fluviatile* in the Old River Bed; S12 *Typha latifolia* at Brown Moss and Shrawardine Pool; S14 *Sparganium erectum* at Berrington Pool (Wigginton, 1979), Brown Moss and Castle Pools (Trueman, 1981); S17 *Carex pseudocyperus* at Shrawardine Pool; S18 *C. otrubae* at the Speller; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Fenemere, Oss Mere and elsewhere; S27 *Comarum palustre* at Berrington and Bomere pools (both Wigginton, 1979); and S28 *Phalaris arundinacea* at the Moors.

In woods it is frequent in W5 and W6 *Salix* × *fragilis* woods throughout, and

it has been recorded in W8 *Fraxinus excelsior* at the Bog, Wilderhope. Sometimes it even grows in dry, calcareous grassland such as CG3 *Bromopsis erecta* at Lea Quarry on Wenlock Edge. On the eastern slopes of the Stiperstones it grows above 430 m altitude (SO3798, A.K. Thorne, 2003).



### *Epilobium* × *subhirsutum* Gennari (*hirsutum* × *parviflorum*)

Recorded by E.M. Rutter (K, SHY) in a marshy hollow on Llyncllys Hill in 1955, when the vegetation was 'finer than ever seen in living memory – all plants growing in profusion to full height.' The identification has not been confirmed.

### *Epilobium* × *novae-civitatis* Smejkal (*hirsutum* × *ciliatum*)

Just one record: on a field margin at Eaton Manor Farm (G.D. Kitchener, 2003).

### *Epilobium parviflorum* Schreb.

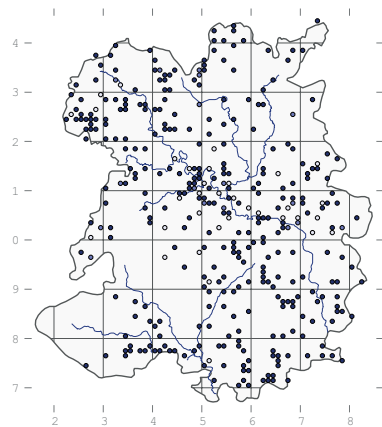
#### Hoary Willowherb

Native. Widespread. Stable. Arable fields, swamps, pond margins and river banks.

First record: Williams, c.1800, 'bogs, ditches and sides of pools, common.'

Usually in wet or at least winter-wet situations, usually on bare ground. It is recorded in A8 *Nuphar lutea* community on the margin of Betton Pool (M.J. Wigginton, 1979) and MG8 *Caltha palustris* at Crose Mere. In mires, it is found in M22 *Juncus subnodulosus* at Crose Mere (Wigginton, 1979), Sweeny Fen and Trefonen Marshes; M23 *Juncus effusus* at Black Coppice; and M27 *Filipendula ulmaria* at Berrington Pool. It is ubiquitous in OV26 *E. hirsutum* community along lowland rivers throughout the county and in marshes adjacent to Bomere and Berrington

pools; it is recorded in OV30 *Bidens tripartita* at White Mere (Wigginton, 1979); OV31 *Rorippa palustris* at Brown Moss; and OV32 *Ranunculus sceleratus* at Crose Mere and White Mere. Sometimes it grows in wetter swamps (occasionally amongst stands of floating vegetation) such as S14 *Sparganium erectum* at Betton Pool and S27 *Comarum palustre* at Bomere and Shomere Pools (all Wigginton, 1979). Finally, there are a few records of it in W5 *Alnus glutinosa* woodland at Oss Mere and Crose Mere (Wigginton, 1979) but it does not thrive under a closed canopy. Generally lowland, but it was once recorded above 425 m on Wild Moor (W.H. Painter, 1909).



## *Epilobium* × *limosum* Schur (*montanum* × *parviflorum*)

One large, vigorous plant on stonework near the blast furnace at Blists Hill (SJ694033, G.D. Kitchener, 2003).

## *Epilobium* × *dacicum* Borbas (*parviflorum* × *obscurum*)

Collected 'near Shrewsbury' by Leighton (<1889) (det. G.H. Ash, SHY) and found in several fields of set-aside on Eaton Manor Farm by G.D. Kitchener in 2003.

## *Epilobium* × *persicinum* Reichb. (*parviflorum* × *roseum*)

Collected by J.C. Melvill in his garden by the Meole Brook at Meole Brace in 1894 and 1907 (det. G.D. Kitchener, BM).

## *Epilobium* × *floridulum* Smejkal (*parviflorum* × *ciliatum*)

Along the track to Crifftin Quarry (Whild, det. G.D. Kitchener, 2003, BIRM), near the blast furnace on Blists Hill, and at Eaton Manor Farm (both Kitchener, 2003).

## *Epilobium* × *rivulare* Wahlenb. (*parviflorum* × *palustre*)

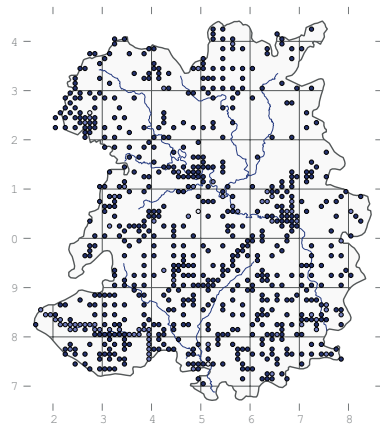
In sedge swamp at the Old River Bed (A.O. Chater & H.J. Crouch, 2008, BIRM).

## *Epilobium montanum* L. Broad-leaved Willowherb

Native. Widespread. Stable. Woods, swamps and grassland.

First record: Williams, c. 1800, 'ditch banks, common.'

Frequent if not ubiquitous in base-rich woodlands, mainly W8 *Fraxinus excelsior* woods such as Llynclys Hill, parts of Oaks Wood and Perryhouse Dingle; W6 *Salix* × *fragilis* woods, as at Cole Mere; and sometimes in W10 *Quercus robur* woods as on Haughmond Hill. It easily spreads onto disturbed ground and bare patches in grassland such as CG3 *Bromopsis erecta* in Lea Quarry, or into wetland habitats such as M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979) and even S12 *Typha latifolia* swamp at Berrington Pool.



## *Epilobium* × *aggregatum* Celak. (*montanum* × *obscurum*)

Apparently recorded by Perring in 1962 at Hinton (SJ407076), but without a specimen or confirmation.

## *Epilobium* × *interjectum* Smejkal (*montanum* × *ciliatum*)

Two plants in Pant Railway Station coalyard (J.H. Clarke, det. G.D. Kitchener, 1994); one plant in the gravel around a display of old ploughs at Acton Scott farm (Kitchener, 2003); two large plants in the garden of the rectory at Church Stretton (Kitchener, 2003).

[*Epilobium* × *abortivum* Hausskn. (*lanceolatum* × *roseum*). Collected by J.C. Melvill at Meole Brace in 1907 and 1915, and identified by E.S. Marshall as this hybrid (BIRM, BM), but now considered

unconfirmed, and probably actually to have been *parviflorum* × *roseum* (G.D. Kitchener).]

## *Epilobium lanceolatum* Sebast. & Mauri

### Spear-leaved Willowherb

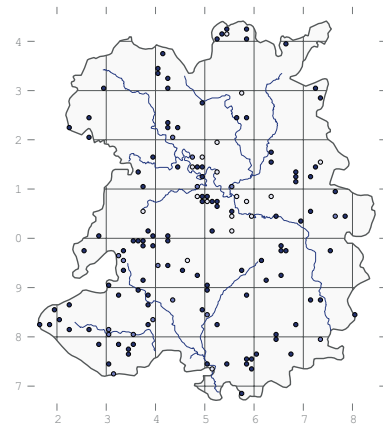
Newly recorded in 2014 as a roadside weed in Shrewsbury (SJ496130, Whild, BIRM).

## *Epilobium tetragonum* L. Square-stalked Willowherb

Native. Scattered. Stable. Wet woods, swamps and arable fields.

First record: Williams, c. 1800, 'bogs and ditches.'

In a variety of habitats, but more common in wetlands. It is recorded in MG10 *Holcus lanatus* at Old Oswestry and Ruewood; OV26 *Epilobium hirsutum* near Bomere Pool; S14 *Sparganium erectum* in a pool on Old Oswestry; and W5b *Alnus glutinosa* woodland at Top Pool. It is also found in arable fields such as at Eaton Manor Farm and on waste ground as at Blists Hill museum (both G.D. Kitchener, 2003).



## *Epilobium* × *mentiens* Smejkal (*tetragonum* × *ciliatum*)

One plant near the blast furnace at Blists Hill; in the margins of fields of set-aside at Eaton Manor Farm (both G.D. Kitchener, 2003).

## *Epilobium obscurum* Schreb. Short-fruited Willowherb

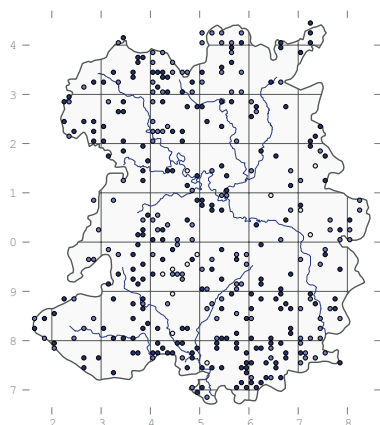
Native. Widespread. Stable. Wetlands, wet woodlands, arable fields and waste ground.

First record: G.H. Griffiths, c. 1870, 'near Norton Camp.'

In a wide variety of habitats, scattered throughout the county. It has been recorded in MG9 *Deschampsia cespitosa* at Cole Mere; M22 *Juncus*

*subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* at Ruewood (P. Welsh, 1981), Fenemere and Snipe Bog; OV10 *Senecio vulgaris* on an arable field margin at Lower Faintree; OV26 *Epilobium hirsutum* vegetation at Bomere Pool; and OV30 *Bidens tripartita* on the edge of Newton Mere.

In swamps it is found in S11 *Carex vesicaria* at The Long Bog and S12 *Typha latifolia* at Brownheath Moss. There are also records of it in W1 *Salix cinerea* woodland at Shomere Pool and W6 *Salix × fragilis* Brown Moss and the Mere. A good place to see it is at Bomere Pool, where it was first recorded by R.M. Serjeantson in 1878 (det. Perring, SHY). This probably deserves to stand as the first county record, as Griffiths was not reliable.



### *Epilobium × vicinum*

Smejkal (*obscurum* × *ciliatum*)

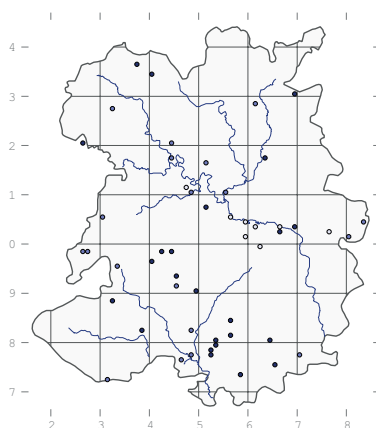
In set-aside at Eaton Manor Farm (G.D. Kitchener, 2003), at Brown Moss (Q.J. Groom, 2006, conf. Kitchener, BIRM), at Lower Netchwood (2009, conf. A.O. Chater, BIRM).

### *Epilobium roseum* Schreber Pale Willowherb

Native. Scattered. Stable. Gardens, river banks, waste ground and walls.

First record: R.M. Serjeantson, 1871, Radbrook House (SHY).

On bare ground in a variety of habitats, with little obvious pattern to its distribution. There are recent records of it on gravel in an old stable yard at Crudington Green, in a peaty hollow near Top Pool, in stream gravel under a road bridge at Eaton-under-Heywood (G.D. Kitchener, 2003) and in a ditch by the A49 at Church Stretton (Kitchener, 2003). There are few places where it has been recorded for any period of time – the exception being Church Stretton, where it has been noted since 1907 (H.M. Auden).



### *Epilobium ciliatum* Raf.

#### American Willowherb

Neophyte. Widespread. Increasing. Waste ground and wetlands.

First record: I. Haig-Brown, 1959, Shrewsbury Canal at Berwick Wharf (ABS).

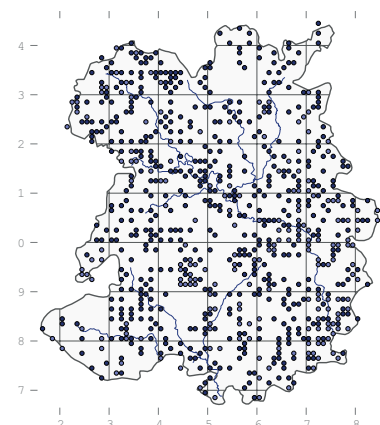
Very widely naturalised on waste ground, urban sites and semi-natural habitats. Edward Rutter thought he had the first record in 1961 when he found it on railway ballast at Shoot Hill (SHY) but Sinker (1985) claims that Perring had seen it in the county in the late 1950s. The earliest substantiated record known, though, is from a herbarium specimen collected by a student at Aberystwyth.

It is now widespread throughout the county in a wide variety of vegetation communities, most of which are neutral to acid and typically wet. It is rare in grasslands but it is recorded in MG10 *Holcus lanatus* at Brown Moss and Hope Coppice; at Snipe Bog it occurs in M4 *Carex rostrata*; it is common in M23 *Juncus effusus* in places like Newton Mere and Black Coppice; and it occurs in M27 *Filipendula ulmaria* at Berrington Pool, Black Coppice and the Mere.

It is perhaps most common in open vegetation communities, including OV10 *Senecio vulgaris* on waste ground at Shifnal; OV13 *Capsella bursa-pastoris* on a road verge at Priorslee; OV14 *Urtica urens* in an arable field at Rudge Heath (all Trueman, 1981); OV15 *Anagallis arvensis* on arable land at Filletts Farm; OV20 *Sagina procumbens* on walls in Shrewsbury; OV21 *Plantago major* in a garden at Pant (Trueman, 1981); OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1982); OV26 *Epilobium hirsutum* at Bomere Pool; OV30 *Bidens tripartita* on a pond margin near Black Coppice; OV31 *Rorippa palustris* on a pool margin at Brown Moss; OV32 *Ranunculus*

*scleratus* on mud on the edge of Oxon Pool; and OV35 *Lythrum portula* on the edge of Newton Mere.

It is also often found in swamps such as S12 *Typha latifolia* at Brown Moss and Shrawardine Pool; S14 *Sparganium erectum* at Berrington Pool, Kettle Mere and Old Oswestry; S17 *Carex pseudocyperus* at Oxon Pool; and S28 *Phalaris arundinacea* in the margin of the Mere at Ellesmere. In woods it is most common in open, wet woods such as W1 *Salix cinerea* scrub at Calcott Moss; W4 *Betula pubescens* at Lin Can Moss; W5 *Alnus glutinosa* at Cole Mere, Crose Mere and Shrawardine Pool; W6 *Salix × fragilis* at Marton Pool, Chirbury; and sometimes in drier woodland types such as W10 *Quercus robur* at Shrawardine Pool. Up to about 425 m in the former Gatten Plantation on the Stiperstones.



### *Epilobium palustre* L.

#### Marsh Willowherb

Native. Local. Decreasing. Axioophyte: swamps and fens.

First record: Williams, c. 1800, 'bogs, ditches and sides of pools.'

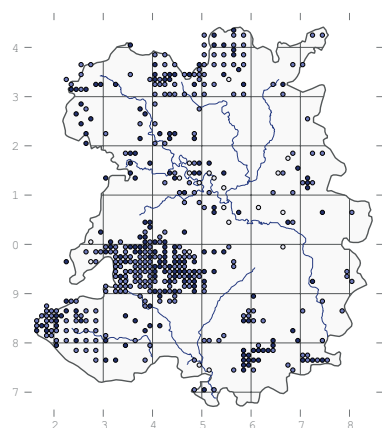
In low nutrient wetland habitats such as M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *J. effusus* on Brown Clee (Trueman, 1981), Cramer Gutter, Rhos Fiddle etc; M25 *Molinia caerulea* at Black Coppice; M27 *Filipendula ulmaria* at the Mere; and M35 *Montia fontana* at Boiling Well (Trueman, 1980), Wildmoor (R. Tapper, 1983) and elsewhere on the Long Mynd; even in MG5 *Festuca rubra* by the stream in Townbrook Hollow.

In swamps and neutral wetlands it is found in OV26 *Epilobium hirsutum* tall herb at Berrington Pool; OV30 *Bidens tripartita* on the edge of Marton Pool, Chirbury; S6 *Carex riparia* at Blake Mere (all Wigginton, 1979); S7 C.



*acutiformis* in the Old River Bed; S9 *C. rostrata* at Berrington Pool (Wigginton, 1979); S10 *Equisetum fluviatile* in the Old River Bed; S26 *Phragmites australis* at Oss Mere; and S27 *Comarum palustre* at Berrington and Bomere pools (both Wigginton, 1979) and Brown Moss (Trueman, 1983).

Sometimes it is found in open woodland such as W4 *Betula pubescens* at Lin Can Moss; W6 *Salix × fragilis* at Cole Mere (Wigginton, 1979); and W10 *Q. robur* on Haughmond Hill.

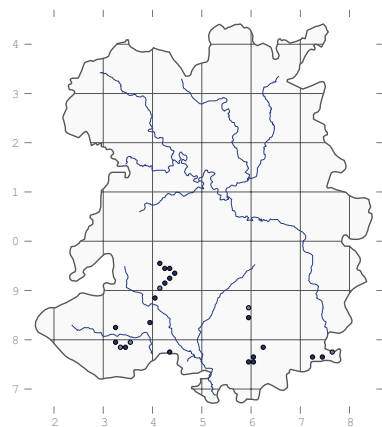


## *Epilobium brunnescens* (Cockayne) Raven & Engelhorn New Zealand Willowherb

Neophyte. Local. Increasing.  
Axiophyte: woodland rides, flushes and streams.

First record: G.P. Richards, 1968, Brown Clee.

In flushes and short grassland in upland situations. In Townbrook Hollow it grows in MG5 *Festuca rubra* grassland but this may not be its typical habitat. There are records of it in many places on the Long Mynd, and it has also been recorded on Black Hill (first by R. Rowe in 1982), Hopesay Hill (D.H. Wrench, 2004), along forestry tracks in Purslow Wood (Rowe, 1982) and Quarry Plantation in Duxmoor Dingle (P.R. Green, 2010), Titterstone Clee (E. Heywood-Waddington, 1977) and in the Wyre Forest (J. Bingham, 1977).



## *Chamerion angustifolium* (L.) Holub

### Rosebay Willowherb

Native. Widespread. Stable. Roadsides, railways, scrub, woods, pond margins and bare ground.

First record: J. Babington, 1803, 'I have seen a bed of it nearly covered with bees from a neighbouring hive... I never saw it growing wild in this county.'

Originally a native plant of the uplands, not occurring in Shropshire except in gardens until the mid 19<sup>th</sup> century. In 1835 William Anstice recorded it on the banks of the Severn at Ironbridge and in 1837 Harriet Moseley collected it in a coppice at Buildwas. After that it became very common and is now probably stable in its distribution.

It is recorded in CG3 *Bromopsis erecta* in Lea Quarry; MG5 *Festuca rubra* in Ropewalk Meadow; OV23 *Dactylis glomerata* in Dorrington Sand Quarry (Trueman, 1981); OV26 *Epilobium hirsutum* at Betton Pool; S24 *Calamagrostis canescens* at Oss Mere; and S26 *Phragmites australis* fen at Marton Pool, Chirbury (these three by Wigginton, 1979). At Prees Heath it is occasional in U1 *Rumex acetosella* and at Brown Moss it grows in U2 *Deschampsia flexuosa*. It is also present in a wide variety of woodland types, including W4 *Betula pubescens* at Lin Can Moss, W5 *Alnus glutinosa* at Hencott Pool, W8 *Fraxinus excelsior* at Blakeway Coppice, W10 *Quercus robur* at the Mere, W16 *Quercus petraea* at Oaks Wood and Poles Coppice. At Old Oswestry it also occurs in W23 *Ulex europaeus* scrub and on waste ground in Ironbridge it is recorded in W24 *Rubus fruticosus* underscrub (Trueman, 1981). Large stands can be described at OV27 *Chamerion angustifolium* tall herb community; these are common along railways and can also be seen at Old Oswestry. In 2013, the restoration areas at Prees Heath were almost entirely taken over by OV27, seven years after they had been deep ploughed.



## *Oenothera glazioviana*

Micheli ex C. Martins

### Large-flowered Evening-primrose

Neophyte. Scattered. Stable. Waste ground, gardens, roadsides and sand quarries.

First record (as *O. lamarckiana*): J.C. Melvill, 1913, Badger Dingle.

Widespread on waste ground and roadsides, usually as scattered individuals rather than large populations. This is the commonest Evening-primrose, but care is needed to separate it from hybrids, which are also quite common. It does not persist in closed vegetation. A good place to see it (since it was first recorded there in 1977 by K.K. Bell) is Prees Heath.

## *Oenothera × fallax* Renner (*biennis* × *glazioviana* Micheli ex C. Martins)

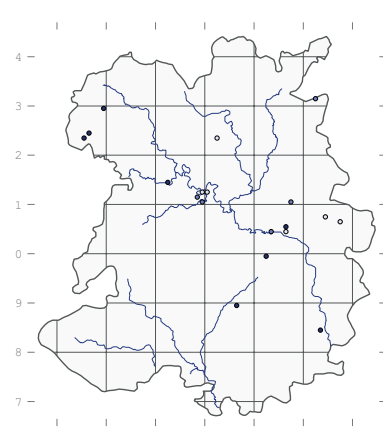
Some 50 plants on a roadside verge at Quatford (J. Bowra, 1995).

## *Oenothera biennis* L. Common Evening-primrose

Neophyte. Scattered. Stable. Waste ground, roadsides, railway lines, etc.

First record: F. Dickinson, 1841, Coalbrookdale.

Occasional on waste ground. There are recent records for a fuel-ash tip in Coalbrookdale (1996) and a single plant on a roadside verge at Holdgate (I.P. & P.R. Green, 2009).



## *Oenothera biennis* × *cambrica* Rostanski

Just two records: on the old railway at Blodwel Quarry (J.H. Clarke & Franks, det. J. Bowra) in 1993, and at Oswestry Railway Station (M.E. Roberts, det. Bowra) in 1994.

***Oenothera stricta*** Ledeb. ex Link

Fragrant Evening-primrose

Neophyte. Rare.

Naturalised on a roadside bank in Bridgnorth in 1982 (B.R. Fowler, 1982).

***Fuchsia magellanica*** Lam.

Fuchsia

Neophyte. Rare.

Persisting in an abandoned garden at Lady Forester's Hospital, Much Wenlock, in 2004.

***Circaea lutetiana*** L.

Enchanter's-nightshade

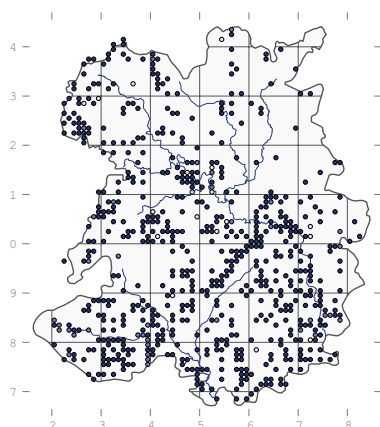
Native. Widespread. Stable. Woods, hedges, gardens.

First record: Williams, c. 1800, 'woods, common.'

Common in woods on neutral to calcareous soils, ranging from quite damp to rather dry. It persists in conifer plantations and hedgerows and freely colonises new woods and even neglected gardens.

It is recorded in W5 *A. glutinosa* woods at Cole Mere and Sweat Mere (J.R. Packham, 1970); W6 *Salix × fragilis* at Blake Mere, Hencott Pool, and the Alders, Wollaston; W7 *Lysimachia nemorum* at Fastings Coppice, Limekiln Wood and the Ercall (both Trueman, 1981); W8 *Fraxinus excelsior* everywhere; W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* at Bannister's Coppice, Cole Mere and Haughmond Hill.

A good place to see it is at Benthall Edge, where it has been recorded since 1850 (R.M. Norman, NOT).



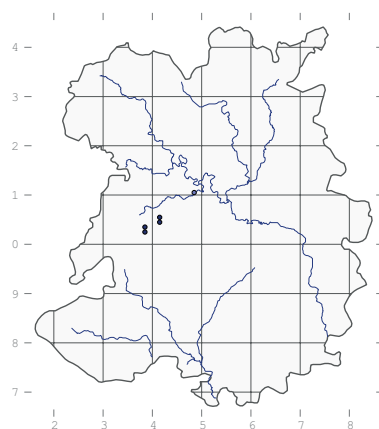
***Circaea × intermedia*** Ehrh.  
(*alpina* × *lutetiana*)

Upland Enchanter's-nightshade

Native. Rare. Stable. Axiophyte: upland woods.

First record: J.C. Melvill, 1915, Meole Brace.

In the headwaters of the Habberley Brook, in W7 *Lysimachia nemorum* at Upper Vessons and Maddox's Coppice at an altitude of up to 300 m. It also occurs further downstream at Earl's Hill and Oaks Wood, where the vegetation is closer to W8 *F. excelsior* woodland. There is a curious historical story to its discovery in the county, because Melvill found it growing by the side of the Rea Brook at Meole Brace in 1915. After puzzling over its identification for a couple of years, he sent specimens to the Botanical Exchange Club where it was misidentified as *C. alpina* by E.S. Marshall and W.H. Pearsall. His plants were almost certainly *C. × intermedia*, washed downstream from these upland sites and temporarily established on the outskirts of Shrewsbury. It was more than forty years later, in 1960, that Sinker and Rose discovered the Earl's Hill population, and the Stiperstones ones were found only recently (in 1997 and 2008). The best place to see it is on the side of the Habberley Brook in Oaks Wood, where it is usually abundant.



## Myrtaceae

***Eucalyptus pulchella*** Desf.

White Peppermint-gum

Neophyte. Rare.

One (planted) tree on the edge of a plantation at Lower Ledwyche (SO543742, Lockton, 2009, BIRM).

## Staphyleaceae

***Staphylea pinnata*** L.

Bladdernut

Neophyte. Rare.

Frequent in woodlands at Attingham Park (F.H. Perring, 1969).

## Anacardiaceae

***Rhus typhina*** L.

Stag's-horn Sumach

Neophyte. Scarce. Increasing. Gardens, waste ground.

A common garden shrub which increases by suckering and is occasionally found on waste ground in the vicinity of houses, on river banks, canal sides and roadsides. At Woodhill near Highley it grows as naturalised on waste ground where a house has been demolished, but there is no evidence of it spreading in the wild.

***Cotinus coggygria*** Scop.

Smoke-tree

Neophyte. Rare.

On Ketley Pitmounds (P.S. Gateley, 2003), where it was presumably planted.



*Acer campestre* flowers



*Malva neglecta*

## Vascular plants

### Sapindaceae

#### *Aesculus hippocastanum* L.

##### Horse-chestnut

Neophyte. Widespread. Stable. Woods, scrub, hedges, towns and roadsides.

First record: Perring, 1972, Attingham Park.

Frequently planted in gardens, parks and on roadsides, and sometimes naturalised on waste ground and in woods. It is recorded in W4 *Betula pubescens* woodland on Calcott Moss; in W8 *Fraxinus excelsior* on Haughmond Hill, Loamhole Dingle (Trueman, 1981) and at Park Hall, Whittington; and in W21 *Crataegus monogyna* scrub by the side of the old Shrewsbury Canal at Uffington.



#### *Aesculus carnea* Hayne

##### Red Horse-chestnut

Neophyte. Scattered.

Planted in gardens and churchyards, on roadsides and in woods; scattered throughout the county.

#### *Acer platanoides* L.

##### Norway Maple

Neophyte. Scattered. Stable. Gardens, roadsides and woods.

First record: R.A.D. Cameron, 1975, the Novers.

Planted in many places throughout the county and there are sometimes abundant seedlings on shady roadside banks in places like Beckbury, but it is not really naturalised anywhere.

#### *Acer campestre* L.

##### Field Maple

Native. Widespread. Stable. Woods and hedges.

First record: Williams, c. 1800, 'hedges, common.'

Occasional in calcareous woods, where it is a native in ancient woodland

sites, but also very common in hedges and tree planting schemes. Unless planted, it is almost entirely restricted to W8 *Fraxinus excelsior* woods, in which it occurs throughout the county, but it is also recorded in W21 *Crataegus monogyna* scrub by the Shrewsbury Canal at Uffington and W24 *Rubus fruticosus* scrub on a hedgebank at Pentre Hodre. Both of these are successional stages towards W8. Lowland: up to about 350 m in Crowsnest Dingle.



#### *Acer pseudoplatanus* L.

##### Sycamore

Neophyte. Widespread. Stable. Woods, hedges and scrub.

First record: Williams, c. 1800, 'hedges, common.'

Common throughout the county except in the most treeless stretches of upland. It is thoroughly naturalised in woods, where it can become dominant, especially if disease or clearance has removed other species, as Dutch Elm Disease did in many woods in the 1970s. It is frequent in many types of wood, including W5 *Alnus glutinosa* at Black Coppice, Brownheath Moss and Cole Mere; W6 *Salix* × *fragilis* at Redhill Coppice and the Dell, Sundorne; W7 *Lysimachia nemorum* at Birchen Park and Brook Vessons; W8 *Fraxinus excelsior* in many places; W10 *Quercus robur* at Bannister's Coppice, Fron Wood, Mainstone (Trueman, 1981) and elsewhere; W16 *Q. petraea* at Oaks Wood; and W17 *Leucobryum glaucum* at Oaks Wood. Saplings are common in scrub, including W21 *Crataegus monogyna* scrub by the Shrewsbury Canal at Uffington and W24 *Rubus fruticosus* underscrub in a hedgerow at Chatwall. There are also records of seedlings in CG2 *Avenula pubescens* at Dolgoch Quarry, MG6 *Cynosurus cristatus* on a riverbank at Becks Field, and in OV20 *Sagina procumbens* on walls in Shrewsbury.

#### *Acer negundo* L.

##### Ashleaf Maple

Neophyte. Rare.

An uncommon street tree, recorded as planted at Rowton Castle, Ketley Pitmounds (P.S. Gateley, 2003), Cosford (M.S. Duffell, 2008) and in a hedge in an amenity area in Castlefields, Shrewsbury.

#### *Acer palmatum* Thunb.

##### Smooth Japanese-maple

Neophyte. Rare.

Planted in parkland at Cound Hall and Shavington Park.

#### *Acer rufinerve* Siebold & Zucc.

##### Grey-budded Snakebark-maple

Neophyte. Rare.

Planted at Ketley Pitmounds (P.S. Gateley, 2003).

### Malvaceae

#### *Malva moschata* L.

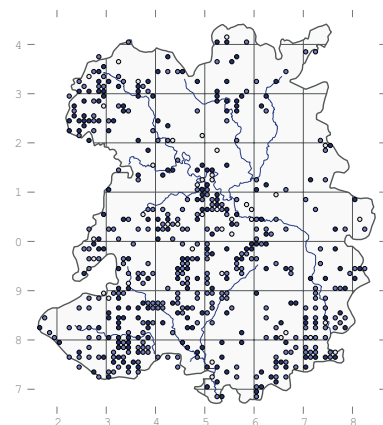
##### Musk-mallow

Native. Widespread. Stable.

Riverbanks, grassland, road verges.

First record: J.J. Dillenius, 1726, Bishops Castle.

On patches of bare ground on roadside banks and riversides on sandy or base-rich soils. On Abbot's Castle Hill it grows in U1 *Rumex acetosella* and patches of OV24 *Urtica dioica* on eroded soils (both Trueman, 2005). On Earl's Hill it grows only in one area of more base-rich soil on the SE side, where it has been known since 1941 (H. Pendlebury). It is sometimes included in seed mixes, and was abundant in an arable headland at Billingsley in 2010. Lowland: up to about 250 m at Cwm Wood (J.M. Roper, 1980).





***Malva alcea* L.****Greater Musk-mallow**

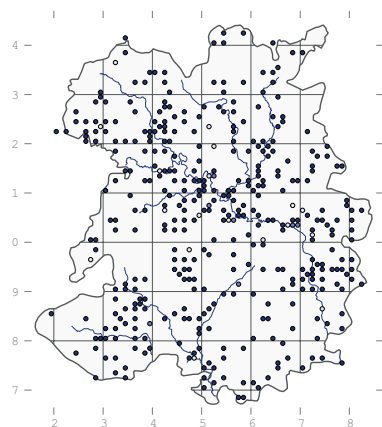
Established along the lane past Wenlock Priory (SJ627005, S. & E. O'Donnell, 2011).

***Malva sylvestris* L.****Common Mallow**

Archaeophyte. Widespread. Stable. Grassland, arable field margins, roadsides, waste ground.

First record: Leighton, 1841, 'waste places, waysides etc., common.'

A common plant on bare ground at the base of hedges and walls, sometimes even on walls, in gardens, field margins and riverbanks. Typical habitat includes OV23 *Dactylis glomerata* grassland but we have no quadrats with it in. Lowland.

***Malva pusilla* Smith****Small Mallow**

Neophyte. Rare.

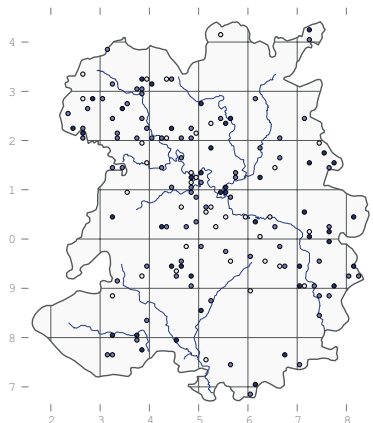
'In a damp, muddy farmyard at the Waen, Knockin' (E.D. Pugh, 1981) and 'appeared as a weed in our garden' at Wentnor (P.D. & S. Kingsbury, conf. Trueman, 1991). It is only ever a casual in Britain.

***Malva neglecta* Wallr.****Dwarf Mallow**

Archaeophyte. Scattered. Stable. Roadsides, waste ground, walls and arable field margins.

First record: Miss Darby, 1833, Buildwas Abbey.

In U1 *Rumex acetosella* grassland on Abbot's Castle Hill (Trueman, 2005), and on waste ground and roadsides in many places throughout the county. Although it is just a casual it is fairly persistent in some areas, such as Pulverbatch, where it has been recorded several times between 1891 (R.D. Benson) and 2005 (A.K. Thorne).



[*Malva pseudolavatera* Webb & Berthel., Smaller Tree-mallow.

In *Record of Bare Facts* 14 (1905) there is a record of *Lavatera cretica* at Vale Castle by R.D. Benson based on a specimen in his herbarium, which was examined after his death in 1904. This was probably a specimen sent to him from the Scilly Isles rather than one collected at the Shropshire site of that name.]

***Malva × clementii* (Cheek)**

Stace (*olbia × thuringiaca*)

**Garden Tree-mallow**

Neophyte. Rare. Increasing. Gardens, waste ground.

A garden escape. Several plants on an arable field margin at Cherrington (SJ662194) in 2005 and 2008; and on waste ground at Linley Brook, Broadstone near Munslow, and Newton.

***Althaea officinalis* L.****Marsh-mallow**

Collected by W.P. Brookes at Lutwyche Hall in the 1830s (conf. Leighton, SHY) and at Wilmcote, Corvedale by R.D. Benson in 1904. Probably garden plants in both cases.

***Abutilon theophrasti***

Medikus

**Velvetleaf**

Neophyte. Scarce. Casual. Arable fields and roadsides.

First record: J. Davies (conf. P.M. Benoit), 1991, 'in a barley field on Crickheath Farm, near the river Morda.'

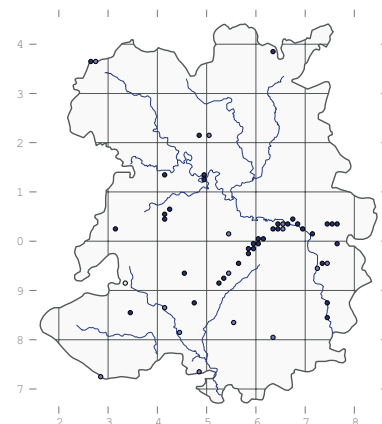
'On a gravel heap at Craven Arms Station' (M.B. Fuller, 1996); 'in an arable field at Bitterley Court' (Trueman, 1996); 'in an arable field at Weir Farm, Montford' (A.K. Thorne, 2001); 'in a sugar beet field at Ford' (M.S. Duffell, 2006); and 'on disturbed ground by roadworks at Morda' (R.A. Dawes, 2006).

***Tilia platyphyllos* Scop.****Large-leaved Lime**

Native. Local. Stable. Axiophyte: ancient woods.

First record: L. Brown, 1726, Lydham churchyard.

Widely planted, but also most probably native on Wenlock Edge, Benthall Edge, Oaks Wood and Earl's Hill. In these places it occurs in W8 *Fraxinus excelsior* woods, except at Oaks Wood, where it grows in a steep ravine in W16 *Quercus petraea* woodland, although the ravine itself has more base-rich soils and could contain localised patches of W8. Even in places where it is thought to be native, trees are sometimes situated on parish boundaries, as at Tick Wood (R.W. Tobin, 1979) which suggests they are not entirely wild. Elsewhere in the county it is obviously planted, especially in country estates such as Acton Burnell Park (Prestwood, 1978), Quinta Park (G.M. James, 1976) and Shavington Park.

***Tilia × europaea* L.**

(*platyphyllos × cordata*)

**Lime**

Native. Widespread. Stable. Woods, hedges, country estates, roadsides.

First record: L. Brown, 1726, 'in the woods about Bishops Castle.'

Widespread as a planted specimen tree but also occurring spontaneously in woods where the parents grow, particularly along Wenlock Edge and Benthall Edge. In semi-natural situations it is largely restricted to W8 *Fraxinus excelsior* woods such as Easthope Wood (Trueman, 1981), Haughmond Abbey Wood, Oaks Wood, Park Hall, Whittington, and Tick Wood (Trueman, 1981). It is an effective coloniser of new sites such as Pattens Rock Quarry (A.K. Thorne, 2006).

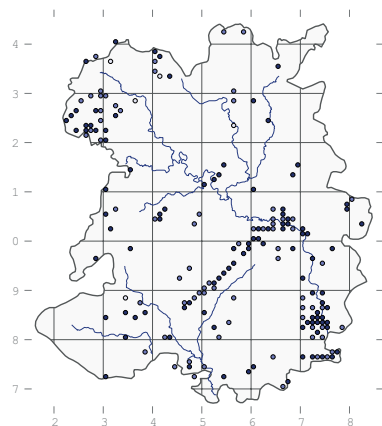
## *Tilia cordata* Mill.

### Small-leaved Lime

Native. Local. Stable. Axiophyte: ancient woods.

First record: J.E. Bowman, 1835, 'a magnificent tree (perhaps planted)... at the north end of Blackmere.'

Widespread in W8 *Fraxinus excelsior* woodland in places such as Craig Sychtyn (R.A. Dawes, 2000), Betton Dingle, along Wenlock Edge and in all the more calcareous woods in the county. At Clunton Coppice it grows on the lower, less acid slopes. The trees on the highest crags at Earl's Hill appear to be of this species, and this is one of the most likely places for it to be native.



*Cardamine pratensis*



*Cardamine amara*

## *Tilia × euchlora* K. Koch

(possibly *caudata* × *dasystyla*)

### Caucasian Lime

Recently recorded – but not recently planted – in hedges at New Marton (SJ342347, Lockton, 2009, BIRM), Dee Side (2009) and Woodhill (2010). Also in the gardens at Hodnet Hall (P.D. Kingsbury, 1991).

## Thymelaceae

### *Daphne mezereum* L.

#### Mezereon

Neophyte. Rare. Casual. Gardens, roadsides.

First record: M. McGhie, 1841, Clee Hill.

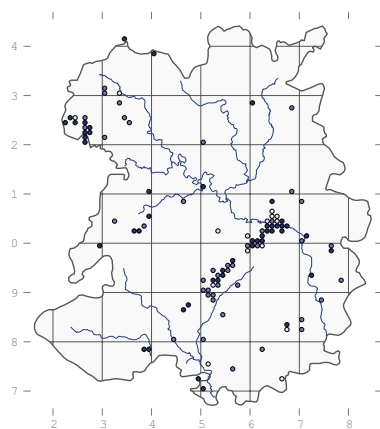
A garden escape, sometimes recorded in semi-wild situations. At Farley Dingle it was recorded by G. Potts between 1902 and 1928, and it was found in an overgrown railway station at Kinnerley by S. Stafford in 1978.

### *Daphne laureola* L.

#### Spurge-laurel

Native. Local. Stable. Axiophyte: woods.

First records: Williams, c. 1800, 'near the church, Buildwas; on the road between Harley Mill and the turnpike; in Birch Coppice; in hedges and lanes about Little Wenlock; in hedges between Cornhill Common and Neen Solars; in hedges between Stanway and Wilderhope; and in hedges and lanes about Stottesden.'



A native species that was probably once planted for cover in woodlands. It is a strong calcicole, and it is now only ever found in W8 *Fraxinus excelsior* woodland and equivalent hedges on base-rich soils, where it is a reasonable axiophyte for species-rich woodlands, although it does seem to favour a reasonable level of disturbance and it seems unlikely that it would persist in a wild, unmanaged wood. It is most often found in semi-shade, but it can tolerate even the dense shade of the

*Taxus baccata* wood at Jones's Rough. Good sites for it include Benthall Edge, Craig Sychtyn, Farley Dingle, Llyncllys Hill, Tick Wood, Wenlock Edge and Windmill Hill. Lowland: up to about 250 m at Craig Sychtyn, Snailbeach and Blakeway Coppice.

## Cistaceae

### *Helianthemum*

#### *nummularium* (L.) Miller

#### Common Rock-rose

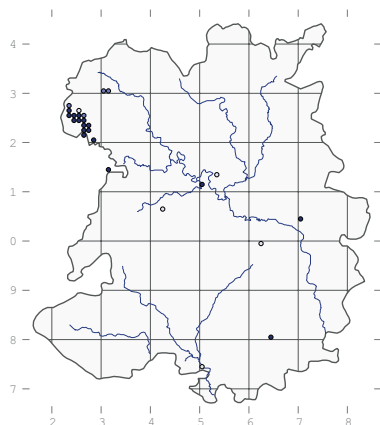
Native. Scarce. Decreasing. Axiophyte: calcareous grassland.

First record: A. Aikin, 1796, Llanymynech Hill.

A strong calcicole, largely restricted to the Carboniferous Limestone region in the NW of the county. Its main habitat is CG2 *Avenula pubescens*, as at Jones's Rough and Craig Sychtyn. On Llyncllys Hill it occurs in CG10 *Helianthemum nummularia* on rock exposures, and in MG5c *Danthonia decumbens* on the flat. Other sites in the NW where it currently occurs include Blodwel Rock, Bryn Celyn, Crickheath Hill (J. Pedlow, 1993), Llyncllys Quarry, Moelydd, Nantmawr and Treflach Wood (R. Mileto, 1999).

Elsewhere in the county it is a very rare plant. At Farlow and Oretton there is a limestone outcrop where Williams first found it 'about the lime-kilns' in about 1800, and it is still present (J. Brown, 1996). In Telford Town Park there is one small area (SJ701042) where J.A. Pagett found it on an anthill in 2000. A record for Bulthy Bank (SJ315141) in 1992 is anonymous.

Places from which it has apparently gone include Haughmond Hill, where it was recorded for nearly 100 years (Williams, 1800 – W. Beacall, 1889). The precise site was Queen Eleanor's Bower, a small tump on the south side of the hill where there are ruins and remains of ore smelting. The geology of the area seems otherwise unsuitable for it. Sinker (1985) described it as being absent from Wenlock Edge, but there is a specimen at SHY collected by W.P. Brookes from 'Hills near Wenlock'. In Leighton's Flora there is a record by H. Spare for Whitcliffe and one by A. Aikin (ca. 1800) at Plealey Banks. In the 1980s E.D. Pugh recorded it near Oswestry and Whittington, where T. Salwey may have also have seen it in 1841. Most of the losses have been of small, outlying populations, possibly associated with lime kilns in many cases. In its core areas it is still quite abundant. The sites are all lowland, rising to 280 m at Craig Sychtyn.



## Tropaeolaceae

### *Tropaeolum majus* L.

#### Nasturtium

Neophyte. Rare.

A casual, occasionally naturalised for a year or two, never far from gardens. It has been recorded in a hedge near Buildwas (R.M. Stokes, 1997) and by the Montgomery Canal at Aston Locks (1997), but it soon died out in both sites. Elsewhere, it has been ignored as obviously planted.

## Limnanthaceae

### *Limnanthes douglasii* R.Br.

#### Meadow-foam

Neophyte. Rare.

Established on the dismantled trackway at Treenpits, Clee Hill (SO592755, J. Bingham, 1999).

## Resedaceae

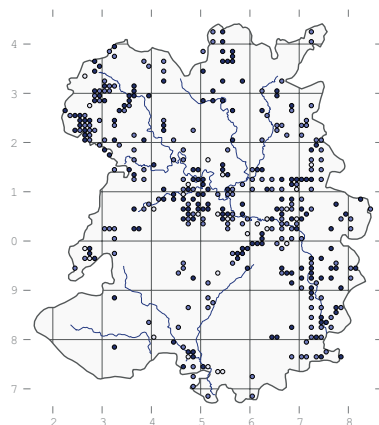
### *Reseda luteola* L.

#### Weld

Archaeophyte. Local. Stable. Roadsides, railways, waste ground.

First record: Williams, c. 1800, 'pastures and ditch banks in a sandy soil, and walls, common.'

Largely restricted to areas in and around the towns, where it grows on any piece of bare, disturbed ground. It is recorded in U1 *Rumex acetosella* grassland on Abbot's Castle Hill (Trueman, 2005) and in similar patches of bare ground in grassland in places like Lyth Hill (K.K. Bell, 2005) and Windmill Hill, but typically it occurs in ruderal places such as on broken concrete in an old council depot in Underdale. Sometimes it is found on bare mud on river banks such as the Severn at Dowles or Vyrnwy at Hendre, or on drying pools such as Mere Pool in Shrewsbury. Lowland: up to about 250 m at Snailbeach.



### *Reseda alba* L.

#### White Mignonette

Recorded near Broseley by F. Dickinson in 1841 (CGE) and by G. Maw in 1853 (MHWK).

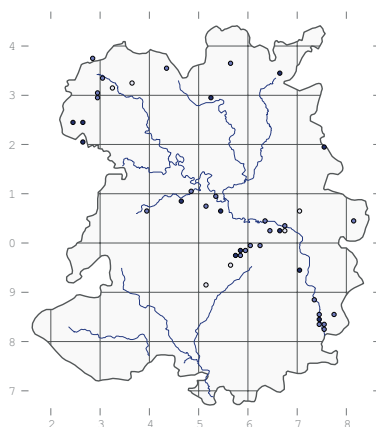
### *Reseda lutea* L.

#### Wild Mignonette

Native. Scattered. Increasing. Quarries, railways, waste ground.

First records: E. Lees and W.P. Brookes (independently), c. 1841, between Broseley and Ironbridge, opposite the foundry.

On thin, dry soil, usually limestone in quarries such as Lea and Lilleshall quarries on Wenlock Edge or Llynclys Quarry (Perring, 1975) or along railways such as the Severn Valley Railway Woodend near Highley.



## Brassicaceae

### *Erysimum cheiranthoides* L.

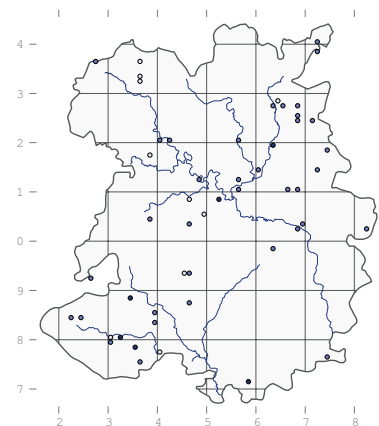
#### Treacle Mustard

Archaeophyte. Rare. Decreasing. Waste ground and field margins.

First record: Williams, c. 1800, 'roadside near the stables at Condover Hall.'

A rare arable weed. There are recent records of it in a potato field at Lea Castle (A.K. Thorne, 2010), in an abandoned garden at Waters Upton (R.M. Stokes, 1998) and in a field of

broad beans at Three Brooks (P.R. Green, 2009). Wilson (1956) gave a record from the Clun Forest as the altitudinal record for this species, which has been recorded in the Clun area since 1902 (W.B. Allen, *Record of Bare Facts* 12, 1903).



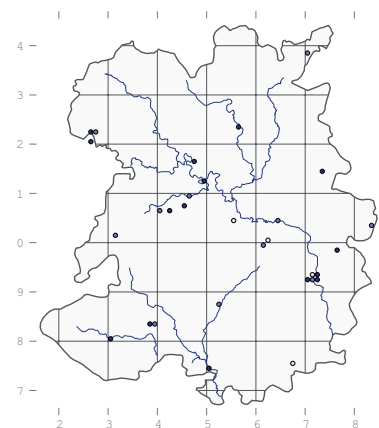
### *Erysimum cheiri* (L.) Crantz

#### Wallflower

Archaeophyte. Scattered. Stable. Walls, cliffs, roadsides.

First record: Leighton, c. 1841, 'old walls and ruins, common.'

A common garden plant, sometimes found naturalised on old walls and rock faces, or rough ground by roadsides. There are recent records of it in places like the cliffs at the Hermitage, Bridgnorth (J. Clayfield, 2000), the walls of Ludlow Castle (A.K. Thorne, 2001) and Annscroft Church. It has been known in some places for well over 100 years, but it does not spread into the wild.





## *Arabidopsis thaliana* (L.)

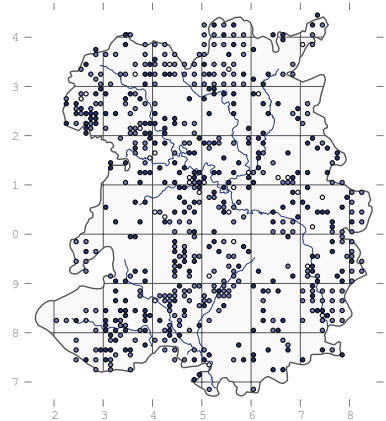
Heynh.

### Thale Cress

Native. Widespread. Increasing. Walls, waste ground, gardens.

First record (as *Arabis thaliana*): Williams, c. 1800, 'sandy fields and walls, common.'

Widespread but rarely abundant in a variety of bare ground habitats and on walls and rocks throughout the county. It is recorded in OV10 *Senecio vulgaris* vegetation on the edge of an arable field at Lower Faintree (2010) and on waste ground at Newport; OV14 *Urtica urens* in an arable field at Rudge Heath; OV20 *Sagina procumbens* on ruined walls at Haughmond Abbey; OV23 *Dactylis glomerata* on a road verge at Shipley; and OV39 *Asplenium trichomanes* on rock outcrops at Holloway Rocks (all Trueman, 1981). Generally lowland, but in the last site (SO313742) it was recorded at an altitude of 380 m (Sinker 1985, p. 146).



## *Camelina sativa* (L.) Crantz

### Gold-of-pleasure

Archaeophyte. Rare. Decreasing. Waste ground, arable fields.

First record: Williams, c. 1800, 'among flax, common.'

A former seed crop and arable weed, now mostly a birdseed contaminant. In 2007 it came up in a field of bird seed mix at Venus Pool (R.M. Stokes). There are older records of it in an arable field at Hoard's Park (A. Bloxam, 1841), Buildwas (W.B. Allen, 1909) and in an old rickyard at Morville (A.K. Tarrant, 1979). Sinker (1985) also mentions a record from Shrewsbury, but considered it unconfirmed.

## *Capsella bursa-pastoris* (L.)

Medikus

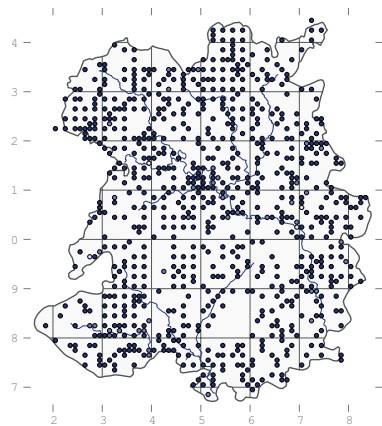
### Shepherd's-purse

Archaeophyte. Widespread. Stable. Arable fields, gardens, roadsides and waste ground.

First record (as *Thlaspi bursa-pastoris*): Williams, c. 1800, 'sides of roads and cultivated ground, common.'

Primarily a weed of farmland, sometimes becoming abundant in resown fields of MG7 *Lolium perenne* grassland, but more often encountered as a scattered weed on bare ground in a variety of situations. Although it lends its name to the OV13 *C. bursa-pastoris* community, this is merely a weed assemblage and it is not particularly abundant in such situations. At Upton Cressett, for example, it grows in this community on the damp edge of an arable field, with abundant *Equisetum telmateia*, while at Priorslee it was recorded on a road verge (Trueman, 1981).

Elsewhere it is found in OV10 *Senecio vulgaris* community in arable fields at Eudon George (2010) and Welshampton, and on waste ground at Newport and Shifnal (these last three by Trueman, 1981); OV14 *Urtica urens* at Edgmond, Rudge Heath (both Trueman, 1981) and The Sands; OV18 *Polygonum aviculare* at Edgmond (Trueman, 1981); and OV20 *Sagina procumbens* on walls in Shrewsbury (M.F. Godfrey, 2011).



## *Turritis glabra* L.

### Tower Mustard

Archaeophyte. Rare. Decreasing. Roadsides.

First record: Williams, c. 1800, 'by the side of the road between Allfield and King Street turnpike near Berrington.'

The only recent record is from a pile of rubble on a roadside at Prees Heath (c. SJ561381) where it was seen by J.H.S. Cox in 1991. Prior to that it has not

been reliably recorded in the county since 1905, when W. Beacall found it on the side of the road between Whitchurch and Ash, which is less than a mile from Prees Heath. It has always been a roadside plant in this county, with records such as 'roadside near Leaton Knolls' (Leighton, 1835, BM, E, WARMS), 'where the road crosses from Upper Cound to Shrewsbury' (T. Butler, c. 1886), 'Lane near Moreton Corbet' (Beckwith, 1889) and this in a letter from J. Fraser: 'Dear Painter, the enclosed specimen of *Turritis glabra* grew in a ditch on the road to Claverley proceeding from the Red Sandstone rich cutting on the main road as you proceed from Wolverhampton to Bridgnorth. I thought it might interest you.' (*Record of Bare Facts* 7, 1898, SHY). It was therefore relatively common in the 18<sup>th</sup> and 19<sup>th</sup> centuries as a roadside casual, but it has now become vanishingly rare. Two records in Sinker's Flora, both by D. Daniels, are almost certainly errors.

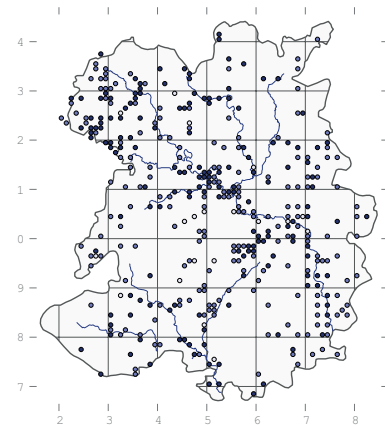
## *Barbarea vulgaris* R.Br.

### Winter-cress

Native. Local. Stable. Riverbanks, arable fields and woodland.

First record (as *Erysimum barbaea*): Williams, c. 1800, 'ditch banks and on rubbish, common.'

A biennial of river banks and arable fields, where sediment deposition and soil disturbance create bare soil for establishment. Curiously, it also grows in woodland in places such as Blakeway Coppice and Haughmond Hill, where shade can also create suitable conditions. The main populations are along the lowland rivers and canals, and it does not grow at any of the meres except the Mere at Ellesmere, where it has been known since 1880 (Beckwith). In arable fields it is typically found along paths or in the margins, where it can escape ploughing. Good places to look for it are along the banks of the Severn in Shrewsbury and by the Montgomery Canal at Aston Locks.



***Barbarea stricta* Andrz.****Small-flowered Winter-cress**

Neophyte. Scattered. Stable. River banks and arable fields.

First record: T. Butler, 1881, 'Sutton lane near the church,' (SHY).

Occasional on bare ground, usually close to the River Severn. The only recent records are for the towpath of the Severn in Shrewsbury near St Mary's Water Lane and the railway station, where it has come up sporadically since 2004; a field at Willey Furnace; and a field at Wroxeter (SJ560089, C. Little, det. T.C.G. Rich, 2013, NMW).

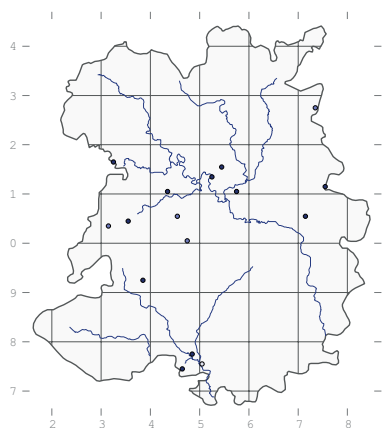
In 1889 W.E. Beckwith found it by the stream between Cross Houses and the Severn and by the Roden at Hine Heath (both conf. J.G. Baker). The records in Sinker's Flora from the Clun area, by T.E. Mitchell, might be considered unconfirmed.

***Barbarea intermedia* Boreau**  
**Medium-flowered Winter-cress**

Neophyte. Scattered. Increasing. Arable fields and waste ground.

First record: A.W. Weyman, 1890, 'banks of the River Teme, Burway.'

A weed of disturbed ground and river banks. In 1958 H.M. Bigwood found it in a hedgebank at Exford's Green (conf. P.D. Sell). B.R. Fowler recorded it in a field margin and hedgebank at Soudley in 1978, and at the top of a railway cutting at Longnor Park in 1980. Perring saw it on the banks of the Vyrnwy at Mervelley in 1997. More recently it has been recorded at Monkmoor Sewage Works, along the path through Haughmond Abbey Woods, along Thieves' Lane at Ruckton, and on a well-trodden footpath through the middle of a huge wheat field at Sheriffhales. It seems rather erratic in appearance and to have few habitat requirements except bare ground in the lowlands.

***Barbarea verna* (Miller) Asch.****American Winter-cress**

Neophyte. Scarce. Increasing. Waste ground.

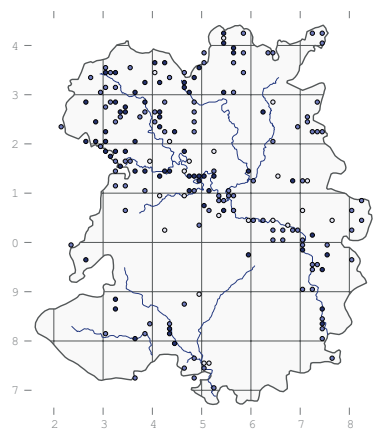
First record: W. Beacall, 1899, Chirbury.

A biennial grown as a salad crop, and occasionally escaping into the wild as a short-lived casual. In 1957 E.M. Rutter found it in quantity on the wall of St Chad's vicarage, on Claremont Hill in Shrewsbury (conf. Sinker, SHY). Since then it has been found on waste ground in various towns, including Llanymynech (J.H. Clarke, 1993), Oswestry (B. Davies, 1993) and around Shrewsbury. There are no sites where it has persisted for any length of time.

***Rorippa palustris* (L.) Besser**  
**Marsh Yellow-cress**

Native. Local. Stable. Rivers, lakes, ponds and canals.

First records: Williams, c. 1800, Eaton Mascott pool and 'banks of Severn.'



An annual plant of bare mud at the edges of rivers and lakes. It has been recorded in OV28 *Agrostis stolonifera* grassland at Edgerley (A.K. Thorne, 2001), in OV30 *Bidens tripartita* at Brown Moss and, of course, in OV31 *R. palustris* vegetation at Brown Moss. It has been recorded at quite a few of the meres: Alkmund Park Pool (W.H. Painter, 1902), Bomere Pool, Fenemere (P. Parker, 1991), Mere Pool, Pole Mere (Phillips, c. 1905), Shrawardine Pool (Miss Lloyd, 1876), Stanwardine Pool (Parker, 1994), the Mere at Ellesmere (Leighton, 1841 & Serjeantson, 1880) and White Mere. It is noticeable that in most of these sites it has only been recorded once, which is consistent with it having long-lived seeds and only coming up occasionally, when conditions are suitable. The exception is Brown Moss, where it has been recorded often since Bigwood & Rutter first surveyed in 1956. Along rivers, it has been recorded on the Camlad, Cound, Onny, Perry, Rea, Roden, Severn, Tanat,

Teme, Tern and Worfe. A good place to see it is along the Severn at Monkmoor, where the river is wide and shallow, with muddy and gravelly margins.

[*Rorippa* × *erythrocaulis* Borbas (*amphibia* × *palustris*), Thames Yellow-cress]

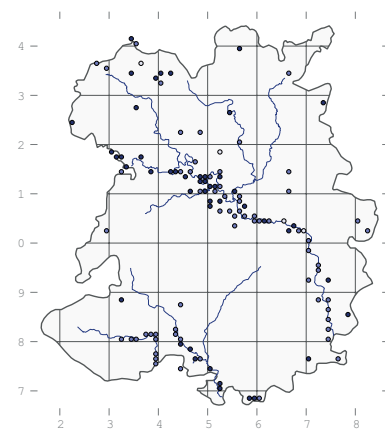
In 1874 G.C. Druce apparently recorded this hybrid at Linley (SO69) (Hamilton 1909, *Record of Bare Facts* 35, 1926) but it needs confirmation before it can be included on the county list.]

***Rorippa sylvestris* (L.) Besser**  
**Creeping Yellow-cress**

Native. Local. Stable. Rivers, meres, ponds.

First record: E. Lhwyd, 1681, 'in ye ditches before you passe over Severn goeing to Breiddin hill.'

Frequent along the Severn, Vyrnwy, Dee, Teme, Onny and Clun, and occasional around the meres and other ponds. It usually occurs on bare mud in open vegetation such as OV24 *Urtica dioica* and OV30 *Bidens tripartita* on a mud bank by the Severn near the English Bridge, Shrewsbury. It is recorded in OV31 *R. palustris* at Fenemere (M.J. Wigginton, 1979); in OV32 *Ranunculus sceleratus* at Oxon Pool; in OV35 *Lythrum portula* at Newton Mere; and in S17 *Carex pseudocyperus* community at Oxon Pool.

***Rorippa* × *anceps* (Wahlenb.)**  
**Reichb. (*amphibia* × *sylvestris*)****Hybrid Yellow-cress**

Native. Rare. Stable. River banks.

First record: Leighton, 1839, River Severn in Shrewsbury (det. B.E. Jonsell, BM).

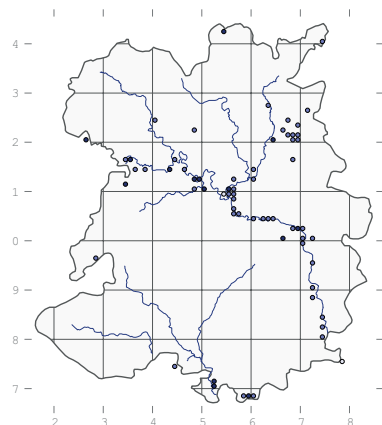
Sinker (1985) considered this to be a common hybrid along the banks of the Severn, but although this may be correct there are few records. It is still in Shrewsbury, where Leighton found it (2006, BIRM) and it was found further upstream at Preston Montford by P. Lukey (2002, conf. B. Jonsell).

## *Rorippa amphibia* (L.) Besser Greater Yellow-cress

Native. Local. Decreasing. Rivers.

First record (as *Sisymbrium amphibia*): Williams, c. 1800, 'banks of river Severn' (BON).

Occasional along the rivers Severn, Teme and Tern, usually in shallow water rather than on dry mud. It is recorded by Trueman (1981) in S14 *Sparganium erectum* swamp by the bank of the Severn at Buildwas. There are a few records of it elsewhere, some of which may well be errors. A good place to see it is along the Severn in Shrewsbury, on the Becks Field or the Quarry side.

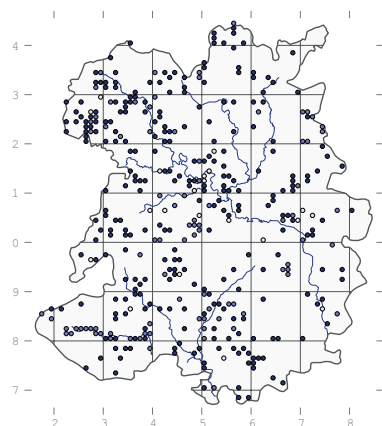


## *Nasturtium officinale* W.T. Aiton

### Water-cress

Native. Widespread. Stable. Open water and wetland.

First record (as *Sisymbrium nasturtium*): Williams, c. 1800, 'ditches, common'.



A perennial herb that grows in a wide range of wetland habitats, including rivers and streams, canals, meres, pools, ditches, marshes and wet woods. It is usually found in clear water, so it tends to occur in the upper reaches of rivers, and it is not characteristic of the Severn. Vegetation communities include S27 *Comarum palustre* at

Brown Moss (Trueman, 1983), W5 *Alnus glutinosa* woodland at Oss Mere, and S14 *Sparganium erectum* swamp at Betton Pool (both M.J. Wigginton, 1979). It is not always distinguished from *R. microphylla*, and is therefore somewhat over-recorded. A good place to see it is at Aston Locks, where it is abundant in the canal and in the off-line reserve.

## *Nasturtium* × *sterile* (Airy Shaw) Oefelein (*officinale* × *microphylla*)

### Hybrid Water-cress

Native. Rare. Stable. Streams and ditches.

First record: Perring, 1977, Hodnet Park.

This is the common watercress that is grown for consumption. There are records for Sweeny Fen (Perring, 1989), the Tern at Walcot (J. Croft, 1991), Chemistry (Perring, 1996) and Whiston Meadows (2004, BIRM).

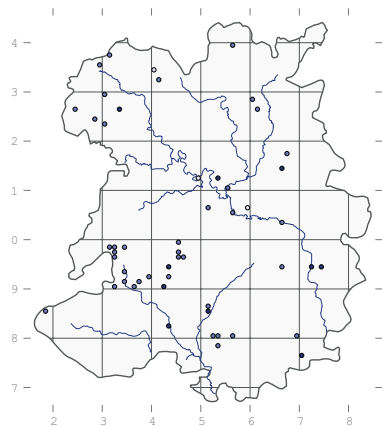
## *Nasturtium microphyllum* (Bönn.) N. Hylander ex A. & D. Löve

### Narrow-fruited Water-cress

Native. Local. Stable. Rivers, canals, stream, lakes.

First record: Bowman, 1831, the Mere (MANCH).

In similar places to *Nasturtium officinale*. Sinker (1985) considered it to be a more upland plant, but the national maps suggest it is more restricted to the lowlands. It grows along streams and in flushes on the Long Mynd, in the Montgomery Canal at Aston Locks, and in the abandoned Shrewsbury Canal at Wappenshall. Other recent records include a pool at the foot of Haughmond Hill (Perring, 1996) and by the Onny at Craven Arms (Clayfield, 2007). In 1979 M.J. Wigginton recorded it in OV30 *Bidens tripartita* vegetation at White Mere.



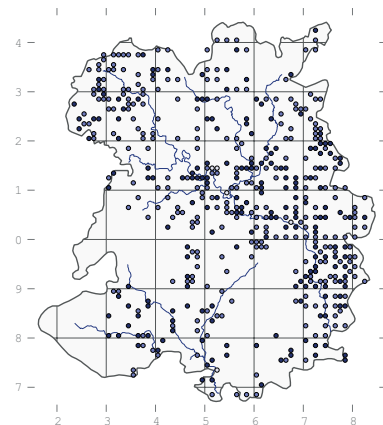
## *Armoracia rusticana* P. Gärtn., B. Mey. & Scherb.

### Horse-radish

Archaeophyte. Local. Stable. River banks, roadsides, waste ground.

First record (as *Cochlearia armoracia*): 'upon the banks of the Severn between Underdale and Monkmoor.'

A garden escape, often found on roadsides near towns and villages and on riverbanks. As it does not produce seed, most plants are presumably garden throw-outs, but it seems likely that it also spreads along rivers from fragments of root. Its main habitat is MG1 *Arrhenatherum elatius* grassland. Good places to look for it are on the banks of the Severn below Shrewsbury, and it is especially abundant between Dowles and Bewdley.



[*Cardamine bulbifera* (L.) Crantz, Coralroot

The only record is for garden plants in the grounds of Broncroft Castle (M.B. Fuller, 1978) (Sinker 1985, p. 189) where it is not naturalised.]

## *Cardamine amara* L. Large Bitter-cress

Native. Local. Stable. Axiophyte: wet woodland.

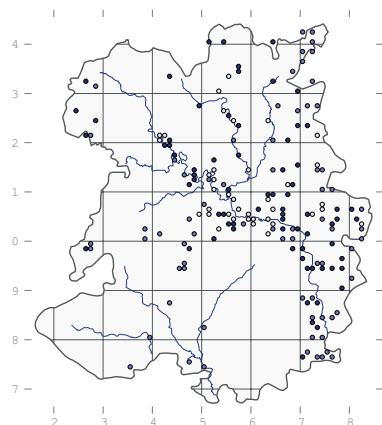
First records: Williams, c. 1800, Cound Mill, Tern Bridge, Cantlop Mill.

On the muddy margins of streams and rivers in the lowlands, usually in species-rich stands of W6 *Salix* × *fragilis* woodland, as at Cosford Wood or Loamhole Dingle, or in more open habitats such as MG1 *Arrhenatherum elatius* grassland by the Severn in Shrewsbury. At Shomere Pool it is recorded in S27 *Comarum palustre* (Wigginton, 1979). Sometimes it is found in small patches either on mud or in crevices in bare rocks, as on the Severn at Weirhill.

It is common along the Severn and its major tributaries, the Tern, Perry,



Meese, Cound, Roden, Worfe and the Borle Brook and occasional along many smaller streams, especially in the Ironbridge area. There are no records of it on the Dee in Shropshire or on the Rea Brook, the Vyrnwy, the Camlad, the Redlake, or the Severn above The Isle. A good place to see it is at Attingham Park, in the swampy woodland at the end of the Mile Walk.



### *Cardamine raphanifolia* Pourret

#### Greater Cuckoo-flower

Neophyte. Rare.

Planted but now naturalised along a stream at Dudmaston (T.F. Preece, 1997).

### *Cardamine pratensis* L. Cuckoo-flower

Native. Widespread. Stable. Grassland, flushes, swamps and wet woodland.

First record: Williams, c. 1800, 'meadows, common.'

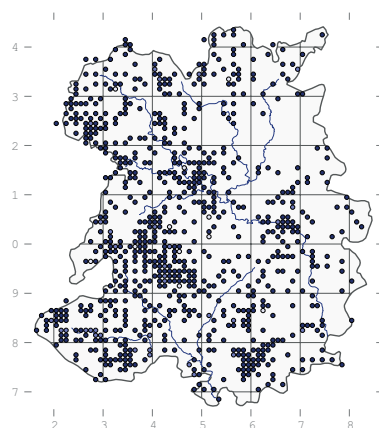
Frequent in damp grassland, particularly MG1 *Arrhenatherum elatius* in places like Buildwas churchyard or along the banks of the Severn in Shrewsbury; in MG4 *Sanguisorba officinalis* at Lord's Meadows; in MG5 *Festuca rubra* at Morton Pool, Derrington, Llanhowell and Stapeley Hill (all Trueman, 1981); in MG6 *Cynosurus cristatus* at Earlsdale; MG8 *Caltha palustris* at Melverley Farm, Morton Pool and Ruewood Pastures; MG10 *Holcus lanatus* at Diddlebury (Trueman, 1981), Ruewood and Fenemere (C. Walker, 1988); and MG13 *Alopecurus geniculatus* at Brown Moss (Trueman, 1983) and Fenemere.

Also present in a wide range of mire communities, including M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M22 *Juncus subnodulosus* at Black Coppice, Crose Mere (M.J. Wigginton, 1979), Morton

Pool (Trueman, 1981), Sweeny Fen and Trefonen Marshes (Trueman, 1981); M23 *Juncus effusus* in Ashes Hollow (C.M. Owen, 1983), Cole Mere (Wigginton, 1979), Black Coppice and elsewhere; M24 *Cirsium dissectum* at Cole Mere; M35 *Montia fontana* at Boiling Well (Trueman, 1980) and Wild Moor (Tapper, 1983); and M36 *Chrysosplenium oppositifolium* at Poles Coppice.

On the edge of White Mere it is recorded in OV30 *Bidens tripartita* (Wigginton, 1979) and OV32 *Ranunculus sceleratus*. In swamps it is found in S3 *Carex paniculata* at Fenemere (C. Walker, 1988); S6 *C. riparia* at Blake Mere (Wigginton, 1979); S9 *C. rostrata* at Wildmoor Pool (Trueman, 1981); S12 *Typha latifolia* at Shrawardine Pool; S14 *Sparganium erectum* at Betton Pool; S24 *Calamagrostis canescens* at Fenemere (both Wigginton, 1979); S26 *Phragmites australis* at Top Pool; and S27 *Comarum palustre* at Bomere Pool (Wigginton, 1979).

It is sometimes abundant in open woodland such as W1 *Salix cinerea* at Shomere; W4 *Betula pubescens* at Lin Can Moss; W5 *Alnus glutinosa* in many places, including Crose Mere (Wigginton, 1979), Morton Pool and Sweat Mere; W6 *Salix × fragilis* at the Mere, Ellesmere (Wigginton, 1979); and W7 *Lysimachia nemorum* at Brook Vessons.



### *Cardamine × fringsii* F. Wirtg. (*pratensis* × *flexuosa*)

Recorded by C.M. Dony at Bitterley in 1955 (det. D.E. Allen, LTN).

### *Cardamine impatiens* L. Narrow-leaved Bitter-cress

Native. Scarce. Declining. Axiphyte: woodland.

First record: L. Brown, 1725, Bishops Castle.

Occasional in disturbed areas in woodland such as recently cleared areas, riverbanks and rock screes.

There are recent records for a quarry face in Marrington Dingle (R. Mileto, 1993), recently cleared woodland at Craig-y-Rhiw (T. Room, 2007), along a stream in Ratlinghope (P.G. Green, 2008), Helmeth Hill (D.H. Wrench, 2009) and alongside the old road at Hopes Wood. Although it is very sporadic in appearance, it is persistent in sites such as Hopes Wood, where it has been recorded every few decades since 1841 (T. Bodenham). Most of its sites are W8 *Fraxinus excelsior* woodland.

### *Cardamine flexuosa* With. Wavy Bitter-cress

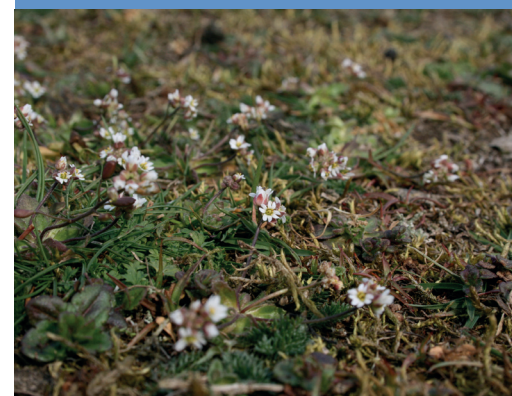
Native. Widespread. Stable. Woods, wetlands and rivers.

First record (as *C. sylvatica*): 'wet ditches, sides of rivers etc, frequent. Near Shrewsbury.'

Frequent in wet woods, most notably along streams and muddy rides. It is often recorded in W5 *A. glutinosa* woodland in places like Cole Mere, Haughmond Abbey Woods and Sweat Mere, but its main habitat is W6 *Salix × fragilis* along rivers such as the Rea Brook at Redhill, the Worfe at Beckbury and the Severn at Shelton Rough. It is also known in W7 *Lysimachia nemorum* at Limekiln Wood (Trueman, 1981) and Upper Vessons; W8 *F. excelsior* at Chorley



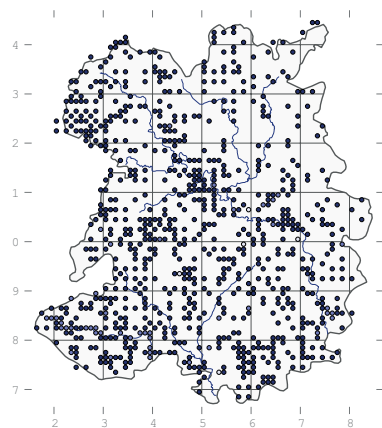
*Lepidium coronopus*



*Erophila verna* at Prees Heath

## Vascular plants

Covert, Tick Wood and by the Borle Brook at New England; W9 *Sorbus aucuparia* at Betchcott Hollow; and in W10 *Quercus robur* at Bannister's Coppice. Elsewhere it is recorded in MG1 *Arrhenatherum elatius* grassland on a roadside at Brandwood; MG10 *Holcus lanatus* at Hope Coppice; M23 *Juncus effusus* on a lake margin on Brown Clee (Trueman, 1981) and in Black Coppice meadow; M27 *Filipendula ulmaria* at the Moors, Ellesmere; M36 *Chrysosplenium oppositifolium* in Poles Coppice; OV30 *Bidens tripartita* on the margins of Newton Mere and White Mere (both Wigginton, 1979); OV35 *Lythrum portula* on the shore of Newton Mere; S17 *Carex pseudocyperus* at Oxon Pool; and S28 *Phalaris arundinacea* at the Mere at Ellesmere. It is less common but still widespread in the well-drained agricultural lowlands.



### *Cardamine hirsuta* L.

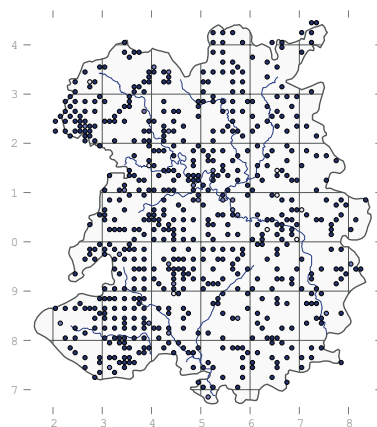
#### Hairy Bitter-cress

Native. Widespread. Stable. Grassland, roadsides, waste ground.

First record: Leighton, 1841, 'hedge banks and shady places, common.'

Typical of pavements, walls and disturbed ground in anthropogenic habitats, and also scattered in more natural places such as rock exposures and sandy grassland. In open vegetation communities it is recorded in OV10 *Senecio vulgaris* vegetation on the edge of an arable field at Lower Faintree; OV20 *Sagina procumbens* on ruins at Haughmond Abbey (Trueman, 1981) and walls in Shrewsbury; OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1982); OV23 *Dactylis glomerata* on road verges in many places, including Shelton, Shipley (Trueman, 1981) and Monkmoor; and OV39 *Asplenium trichomanes* on Holloway Rocks (Trueman, 1981). There are also records of it in MG1 *Arrhenatherum elatius* at Preston Montford (S.T. Geikie, 2008); M35

*Montia fontana* in Carding Mill Valley (R. Tapper, 1983); S12 *Typha latifolia* at Shrawardine Pool; W21 *Crataegus monogyna* scrub on Earl's Hill; and W24 *Rubus fruticosus* on a wall at Stevenshill.



### *Cardamine corymbosa*

Hook.f.

#### New Zealand Bittercress

Several plants on a cobbled pavement in Beckbury (SJ762014, 2010).

### *Lepidium coronopus* (L.)

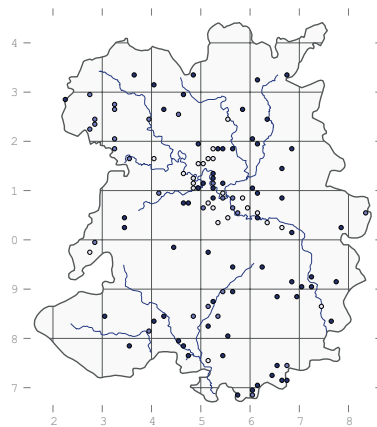
Al-shehbaz

#### Swine-cress

Archaeophyte. Scattered. Stable. Arable fields, waste ground, gardens, river banks.

First record (as *Coronopus ruellii*): Williams, c. 1800, 'footpaths, sides of roads and ditch banks, not uncommon. About Berrington, Pitchford, West Coppice, Battlefield, Bewford, Ensdon, the Quarry, Shrewsbury, on Atcham Bridge, etc.'

Occasional in arable fields such as at Weir Hill Farm, Shrewsbury, in 2009, where it occurred in a cereal field on sandy loam near the Severn. It is widely recorded in the lowlands, usually in the valleys of the main rivers.



### *Lepidium sativum* L.

#### Garden Cress

Neophyte. Scattered. Rare. Gardens.

First record: Leighton, 1839, Hanwood (CGE).

The only recent record in the wild was from the banks of the Severn at St Mary's Water Gate in Shrewsbury (SJ495127, Whild, conf. J.L. Mason) in 1996, where it did not persist. There are earlier records of it in Shrewsbury on a roadside (R.M. Serjeantson, 1880). Also reported as a persistent weed from bird seed in a garden in Trefonen (R.A. Dawes, 1995-1997).

### *Lepidium campestre* (L.) R.

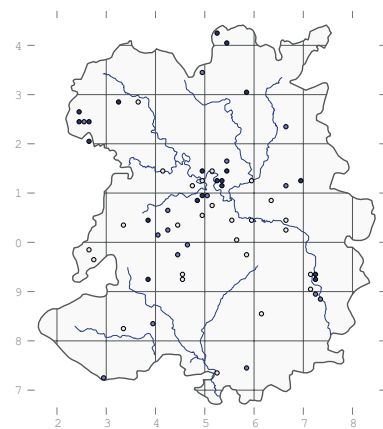
Br.

#### Field Pepperwort

Archeophyte. Scattered. Decreasing. Axiophyte: roadsides, arable fields, quarries.

First record (as *Thlaspi campestre*): Williams, c. 1800, 'clover fields, ditch banks, etc. Common.'

On disturbed ground in a variety of places. There are recent records for the side of the path to the quarry on Sharpstones Hill (SJ494090, 2004, BIRM), a roadside verge at Trench (SJ694120, 2004, BIRM), on Haughmond Hill (SJ547146, 2006, BIRM), and along the A5 near Preston (R.J. Swindells, 2007 and B.J. Laney, 2009).



### *Lepidium heterophyllum*

Benth.

#### Smith's Pepperwort

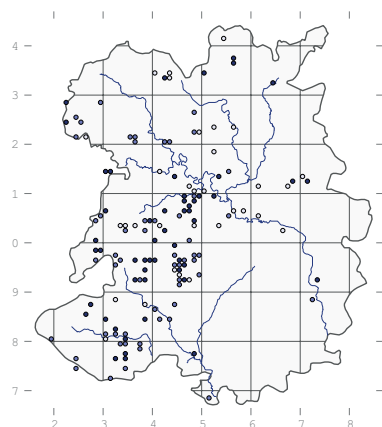
Native. Local. Stable. Axiophyte: grassland and bare ground.

First record: Leighton, 1840, Pen y Foel.

On bare ground on roadsides, farmland and other places. It seems to particularly favour Longmyndian Shales and other sites with U1 *Rumex acetosella* grassland, such as Kempster's



Hill, Prees Heath (J. Ing, 2006) and Lyth Hill (K.K. Bell, 2010), although we have no quadrats with it in.



### *Lepidium virginicum* L.

#### Least Pepperwort

'On new soil thrown up by road widening operations at Gobowen' (E.R. Lloyd, 1930, det. H.A. Hyde, NMW).

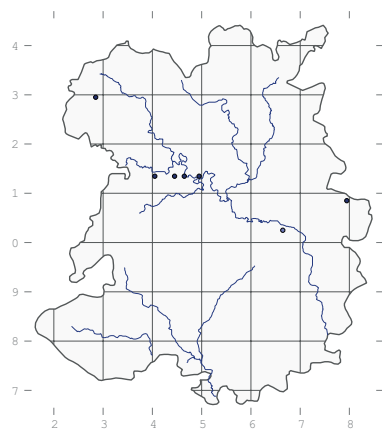
### *Lepidium rudemale* L.

#### Narrow-leaved Pepperwort

Neophyte. Scarce. Increasing. Roadsides and car parks.

First record: G. Potts, 1919, 'in a chicken run at Benthall'.

In Shropshire this is a rare casual rather than an archaeophyte. Since 1997 it has occurred on a road verge at Shelton (SJ465132), and it has also been seen in a car park at Coton Hill (R.M. Stokes, 2001) and on roadsides at Ford and Calcott (B.J. Laney, 2008 and 2009) and Tong Norton (2009). A specimen in Richard Benson's herbarium, labelled 'Vale Castle', has been treated as a first county record (*Record of Bare Facts* 14, 1904, SHY), but it was collected by E.D. Marquand in Guernsey, not in Shropshire. It was also recorded as a casual on a pavement in Oswestry (M.E. Roberts, 1989).



### *Lepidium latifolium* L.

#### Dittander

Native. Scarce. Increasing. Waste ground and roadsides.

First record: Prestwood, 1989, 'near the River Onny, Craven Arms' (SO437826).

Native on coasts in south-east England and well established as a ruderal in other parts of the country. Since it first appeared in the county it has been found near the railway yard (SJ294299) and by a warehouse (SJ288298; both M.E. Roberts, 1993), in a derelict lot at the Humbers (SJ703149, 2009) and on a roadside at Sandford (SJ584340, S. O'Donnell, 2013).

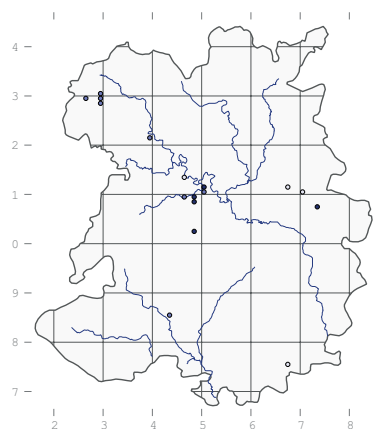
### *Lepidium draba* L.

#### Hoary Cress

Neophyte. Scarce. Stable. Waste ground and railways.

First record: J.A. Panter, 1899, St Georges.

A ruderal, found mainly on railway lines and roadsides. A small colony exists by the railway at Shifnal (SJ736078), where it was first recorded by Sinker in 1983. Elsewhere, it appears to be a short-lived casual, with recent records for places like a roadside at Bayston Hill (SJ486089, 2000), as a troublesome weed in a field at Dorrington (SJ481022, A.K. Thorne, 1990), by the A5 at Pulley (SJ488097, B.J. Laney, 2009) and in flower beds at Prestfelde School in Shrewsbury (SJ509118, K.K. Bell, 2010).



### *Lepidium didymum* L.

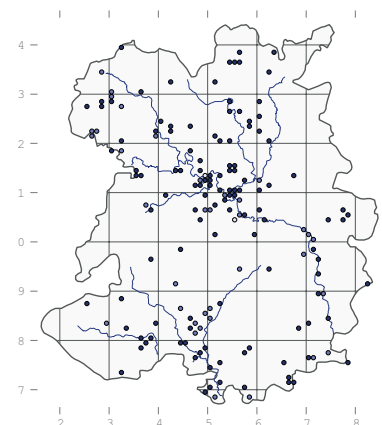
#### Lesser Swine-cress

Neophyte. Widespread. Increasing. Waste ground, arable fields, gardens.

First record (as *Coronopus didymus*): W. Beacall, 1880, 'Severn side near the prison, Shrewsbury'.

Now a widespread weed of waste ground and river shingle, much increased since Sinker's Flora. Its main habitats are gardens (about 25% of 51

recorded sites), rivers (22%), arable fields (14%), road verges (12%) and railways (4%), and it is also found on trampled paths, in farmyards and on waste ground. It is almost entirely a lowland plant, being recorded no higher than about 250 m at Bridges (S. Kingsbury, 1997). The best place to look for it is along the river loop in Shrewsbury, where it can be found on the towpath and on shingle and mud banks.



### *Subularia aquatica* L.

#### Awlwort

Recorded only by A. Aikin at Hencott Pool at the end of the 18<sup>th</sup> century (Turner & Dillwyn 1805). The likelihood of this record has sometimes been questioned, but the habitat might have been quite suitable for it at that time. If correct, this is its only known occurrence in England outside the Lake District.

### *Lunaria annua* L.

#### Honesty

Neophyte. Widespread. Roadsides, hedges and gardens.

First record: M.B. Fuller, 1976, Aston Munslow.

Despite its name, this is a biennial herb that is often cultivated in gardens and frequently escapes onto waste ground nearby; but it is not really naturalised anywhere in the county. It can be recorded at any time of year by its distinctive empty seed heads and the sprawling overwintering shoots. A good place to see it is at Walsbatch, where it is established along roadside hedgebanks at some distance from houses. It was not recorded before 1976 simply because it was such an obvious garden plant; it was undoubtedly present and widespread long before then.



***Lunaria rediviva* L.**

**Perennial Honesty**

Recorded by J.C. Melvill at Meole Brace in 1914 ('has appeared spontaneously two or three years in succession'), presumably in his garden.

***Alyssum alyssoides* (L.) L.**

**Small Alison**

Neophyte. Rare. Casual. Arable fields and waste ground.

Just a few old records: 'on an uncultivated but enclosed piece of ground, Cold Hatton Heath' (R. Anslow, 1864, CGE); 'near the ferry boat, Castlefields, Shrewsbury' (Hamilton, 1888); 'on newly made ground on the north-west side of Clive churchyard' (W. Beacall, <1892); 'field near Berwick laundry' (G.S. Poole, 1892); and 'near Buildwas' (W.B. Allen, 1908, HWB).

***Alyssum montanum* L.**

**Mountain Madwort**

Neophyte. Rare.

Established for a while on the towpath of the Severn at St Mary's Water Gate in 2009 and subsequent years (SJ494126, Whild, det. E.J. Clement, BIRM).

***Aurinia saxatilis* (L.) Desv.**

**Golden Alyssum**

Neophyte. Rare.

One plant, established at the base of a wall in Cressage (SJ591042, R.M. Stokes, 1997).



*Viscum album male*

***Berteroa incana* (L.) DC.**

**Hoary Alison**

Naturalised briefly on a railway siding at Buildwas (W.B. Allen, in *Transactions* 1907 and J.C. Melvill, 1909, HWB) and at Meole Gravel Hole (J.P. Lloyd, 1916).

***Lobularia maritima* (L.) Desv.**

**Sweet Alison**

Neophyte. Scattered. Casual. Gardens, waste ground.

First records: B.R. Fowler, 1976, 'road verges around Albrighton, Beamish, Boningale and Shacklerley.'

A short-lived garden escape, recorded in a railway cutting at Llanymynech (J.H. Clarke, 1992), at Oswestry railway station (M.E. Roberts, 1996), in a car park at Queen's Head (R.M. Stokes, 2001) and in Badger Dingle (J. Clayfield, 2013).

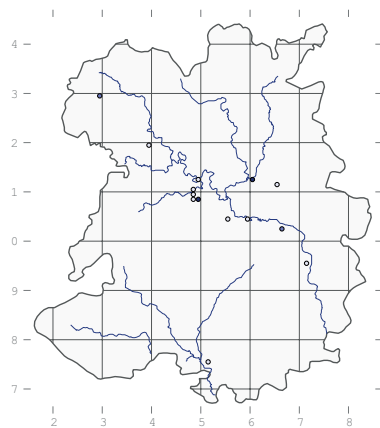
***Descurainia sophia* (L.) Webb ex Prantl**

**Flixweed**

Archaeophyte. Rare. Casual. Roadsides.

First record (as *Sisymbrium sophia*): Williams, c. 1800, 'sides of roads and on rubbish, common.'

On waste ground near the old sugar beet factory at Allscott (Prestwood, 1990 and J. Handley, 2012) and on Sharpstones Hill (R.J. Swindells, 2011), where it was first recorded by T. Bodenham in 1841. A casual of roadsides, where it is probably brought in on tyres and machinery. The exception is G. Potts's record of it in a chicken run at Benthall in 1919.



***Hornungia petraea* (L.) Rchb.**

**Hutchinsia**

Native. Rare. Last recorded in 1855. Limestone grassland.

First records: T. Salwey, 1855, Pentregaer, Trefonen, and 'on hills facing Llansilin'

A plant of limestone hills and sand dunes where it grows on summer-dry

soils in open situations. Apart from Salwey's records, there is a specimen at BON which was collected by W.R. Crotch somewhere in Shropshire in the 19<sup>th</sup> century.

***Arabis caucasica* Willd. ex Schldl.**

**Garden Arabis**

Neophyte. Scattered. Casual. Walls and gardens.

First record: J.C. Melvill, 1913, Badger Dingle.

Common in gardens and sometimes naturalised on walls. Recent records are for Clun (J. Clayfield, 2003); the edges of a railway cutting at Llanymynech (J.H. Clarke, 1992); a rock face in Llyncllys Quarry (P. Parker, 1993); the walls of Ludlow Castle (J. Martin, 1992); the wall of a farm at Overton (I.P. Green, 2009). There are older records for places like the bridge over the Teme in Ludlow (Melvill, 1917); and a quarry at Exfords Green (B.R. Fowler, 1980).

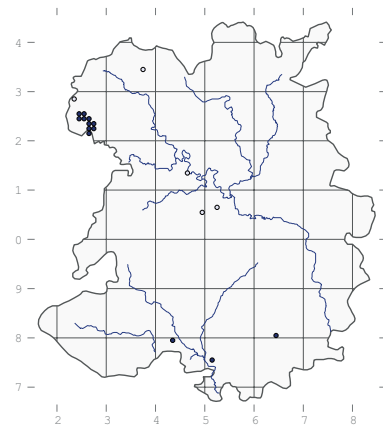
***Arabis hirsuta* (L.) Scop.**

**Hairy Rock-cress**

Native. Scarce. Stable. Axiophyte: limestone cliffs, quarries and railways.

First record: A. Aikin, 1805, 'by the first milestone from Shrewsbury to Welchpool.'

A short-lived perennial typical of bare limestone exposures such as the cliffs at Blodwel Rock, where it was recorded by Trueman in 1981 in W8 *Fraxinus excelsior* scrub. It also occurs in CG3 *Bromopsis erecta* at Moelydd and CG7 *Thymus polytrichus* in Nantmawr Quarry. It is largely restricted to the limestone in the north-west, where it was first recorded by Leighton in 1841; but it also turns up as a casual in places such as an railway embankment at Ludlow (M. Lawley, 1999, BIRM). Lowland: up to about 215 m at Blodwel Rock.



***Aubrieta deltoidea* (L.) DC.****Aubretia**

Neophyte. Scattered. Increasing. Gardens, walls, waste ground.

First record: M.B. Fuller, 1979, 'naturalised on Munslow school wall.'

A common garden plant, sometimes occurring spontaneously on waste ground such as the floor of a disused quarry at Exford's Green (B.R. Fowler, 1980), in an abandoned railway cutting at Llanymynech (J.H. Clarke, 1993) and the wall of the river embankment below St Mary's Water Lane in Shrewsbury. It rarely turns up far from gardens and does not seem to persist.

***Draba muralis* L.****Wall Whitlowgrass**

Native. Rare. Stable. Limestone walls and chippings.

First record: O.M. Feilden, 1904, 'between Gobowen and Oswestry' (SHY).

A native plant of limestone hills which occasionally becomes established on limestone along railways and walls throughout Britain. There are just two current sites: in 1956 H.M. Bigwood found it on a wall by the river at Stevenshill, where it still occurs in some abundance (SJ558039, 2012); and in 2006 D.H. Wrench photographed it in Treflach Quarry (SJ259258).

***Erophila majuscula* Jord.****Hairy Whitlowgrass**

Native. Rare. Stable. Axiophyte: acid grassland.

First record: W.M. Hind, 1845, Pulverbatch (det. T.C.G. Rich, TCD).

Since Hind's first record there have been just three sightings, all in 2012: at Rabbit Warren (SO390875, Lockton), Abbot's Castle Hill (SJ817947, Lockton) and Haughmond Hill (T.C.G. Rich & Whild). It occurs in U1 *Rumex acetosella* grassland and it may be more common than these few records suggest.

***Erophila verna* (L.) DC.****Common Whitlowgrass**

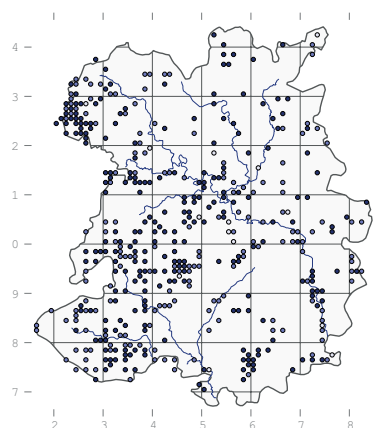
Native. Widespread. Stable. Upland grassland, waste ground, rock outcrops.

First record (as *Draba verna*): Williams, c. 1800, 'walls, roofs of houses, sandy pastures and ditch banks, common.'

On bare ground, walls and rock outcrops throughout the county. It is recorded in a variety of grasslands including CG2 *Avenula pubescens* at

the Novers (Trueman, 1981); CG7 *Thymus polytrichus* at Presthope; CG10 *Helianthemum nummularia* in Minton Batch (R. Tapper, 1983); MG5 *Festuca rubra* on Moelydd; MG7e *Plantago lanceolata* on a bank at Rudge Heath (Trueman, 1981); U1 *Rumex acetosella* in places like Abbot's Castle Hill (Trueman, 2005), Lyth Hill and Prees Heath; and U2 *Deschampsia flexuosa* at the Bog (Trueman, 1981).

In open communities it is found in OV20 *Sagina procumbens* on ruins at Haughmond Abbey (Trueman, 1981) and in OV22 *Taraxacum officinale* on waste ground at Buildwas Sand Quarry (Trueman, 1982) and ruins at Viroconium.

***Erophila glabrescens* Jord.****Glabrous Whitlowgrass**

Native. Scarce. Stable. Grassland and bare ground.

First record: W.M. Hind (det. Rich), 1845, Pulverbatch (TCD).

On bare ground in grassland on the sides of roads and tracks. The first recent record was by Chater, Whild & Jermy on Moelydd in 2002, and it has since been recorded on a roadside at Trench (2004), in Haughmond Abbey Wood (P.G. Green, 2006), Prees Heath (2007) and Polesgate Farm (2010).

***Conringia orientalis* (L.)****Dumort.****Hare's-ear Mustard**

Neophyte. Rare. Last recorded in 1976. Waste ground.

First record (as *Erysimum orientale*): T.P. Blunt, W. Beacall & T. Butler, 1882, 'on rubbish heaps from the foundations of the Martens House at the New School, Shrewsbury.'

A formerly widespread crop contaminant in the south of England, but only every casual here. Blunt *et al.* were clearly drawing attention to the possibly historical origin of the

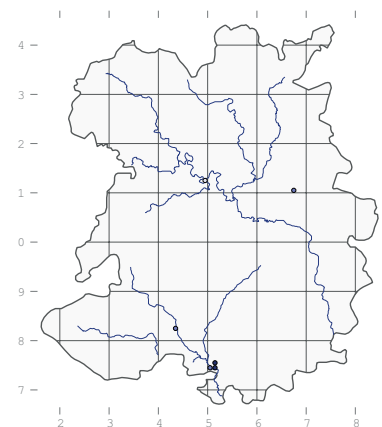
plants at Shrewsbury School, but most records since have been of casuals, too: by J.C. Melvill on waste ground on his estate at Meole Brace in 1906, by W.B. Allen at Buildwas (probably by the railway line) in 1909, and by G. Potts in chicken runs at Benthall in 1919 and Tickwood in 1929. In 1976 B.R. Fowler recorded it on a road verge at Boningale and the side of a track to a farm at Harriot's Hayes.

***Diploaxis tenuifolia* (L.)****DC.****Perennial Wall-rocket**

Archaeophyte. Rare. Last recorded in 1982. Walls and railways.

First record: L. Brown, 1726, 'Ludlow walls.'

Still present on walls in Ludlow (R.F. Shoubridge, 2005), where it has been recorded many times since the 18<sup>th</sup> century. It was also present at Shrewsbury Abbey between 1800 (Williams) and 1841 (Leighton) and it has been recorded at Craven Arms (SO433829, I.R. Bonner, c. 1975) and on a disused railway at Ketley (W.A. Thompson, 1982).

***Diploaxis muralis* (L.) DC.****Annual Wall-rocket**

Neophyte. Rare. Casual. Railways, roadsides, gardens and waste ground.

First record: W.H. Painter, 1896, 'Stirchley, old tram-road. It was probably introduced accidentally, flourished for a season or two, and then died out.'

On waste ground near the Severn at Greyfriars, Shrewsbury (2004) but it disappeared when the area was developed for housing. The only other recent record is an unlocalised one in SJ31 (Prestwood & S. Stafford, 1988). There are older records for a pavement in Oswestry (E.D. Pugh, 1983), a garden in Pant (Pugh, 1981), a flower bed at Hampton Loade station (W.A. Thompson, 1980) and a garden in Shelton (S. Pridcant, 1978).

## *Brassica napus* L.

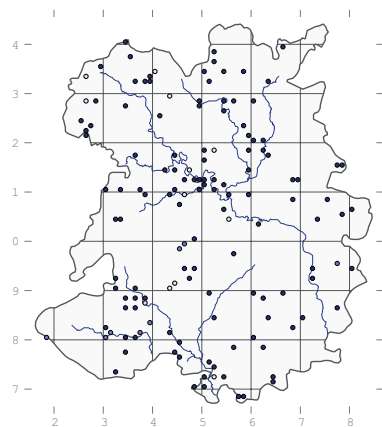
### Rape

Neophyte. Widespread. Casual. Roadsides, field margins and waste ground.

First records: Williams, c. 1800, 'in great plenty in cornfields between Cockshutt and Ellesmere, about Little Stretton, and at St Giles's, near Shrewsbury.'

Usually recorded only when it occurs as a casual on waste ground or on roadsides where it has obviously not been planted, although it also comes up as a crop volunteer in many places. It rarely persists for any length of time. Plants are occasionally found in quite unlikely places, such as a field of MG5 *Festuca rubra* grassland on Llynclly Hill in 2007.

*Brassica napus* ssp. *rapifera* Metzger, Swede, is never really wild and has only been recorded three times – at Harnage (T. Butler, 1880), Cound (Butler, <1886) and Meole Brace (J.C. Melvill, 1917).



## *Brassica rapa* L.

### Wild Turnip

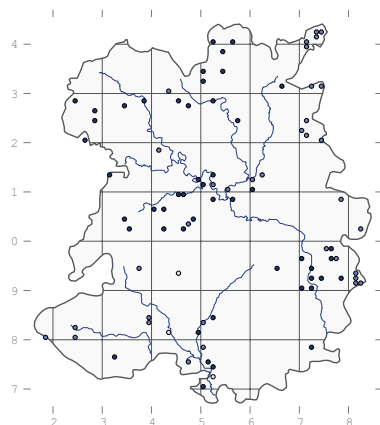
Archaeophyte. Scattered. Stable. River banks and roadsides.

First record: J.J. Dillenius, 1724, 'along ye Severn from Worcester to Salop.'

Although this is a common plant of riverbanks and roadsides, it has a superficial resemblance to Oilseed Rape, *Brassica napus*, and is very much overlooked. Unlike *B. napus*, it is not glaucous and the flowers overtop the buds. The true Wild Turnip, or Bargeman's Cabbage, *B. rapa* ssp. *campestris* (L.) Clapham, does not have a swollen root – the whole plant comes up easily when tugged. The cultivated turnip, *B. rapa* ssp. *rapa*, has a swollen tap-root and has not definitely been recorded in the wild in Shropshire, possibly because botanists do not tend to carry spades. A good place to see *B. rapa* is by either the Severn or the

Rea Brook in Shrewsbury. It is rarely present in any abundance, but plants occur at intervals along the banks.

Sometimes it is found as a casual in quite incongruous habitats – in 2005 it was recorded in W10 *Quercus robur* woodland at the Wildlife Trust's Hope Coppice reserve, after ancient oaks had been felled to create clearings for butterflies.



## *Brassica juncea* (L.) Czernj.

### Chinese Mustard

Recorded at Buildwas by J.C. Melvill in 1923 and 1924.

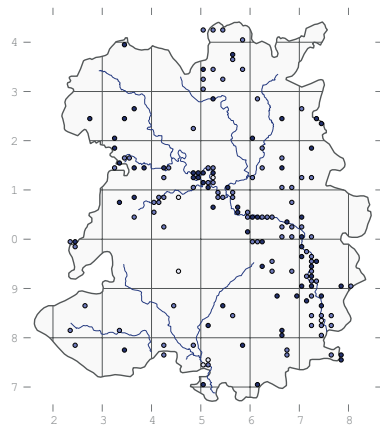
## *Brassica nigra* (L.) Koch

### Black Mustard

Native. Scattered. Stable. Riverbanks and waste ground.

First record (as *Sinapis nigra*): Williams, c.1800, 'ditch banks and on rubbish, but not common.'

Frequent on the banks of the Severn, where it is recorded in OV24 *Urtica dioica* at the English Bridge, Shrewsbury; and S14 *Sparganium erectum* at Buildwas (Trueman, 1981). Elsewhere it is found on bare ground in places like Ludlow Castle (firstly by Miss Darby in 1833) and Ludlow rubbish dump (J.G. & C.M. Dony, 1955, LTN).



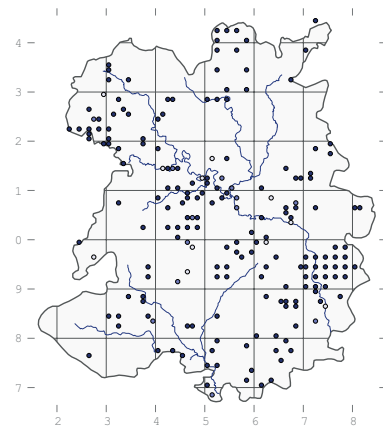
## *Sinapis arvensis* L.

### Charlock

Archaeophyte. Scattered. Stable. Arable fields.

First record: Williams, c. 1800, 'cornfields, common.'

Occasional in field margins throughout, and probably quite under-recorded. A good place to look for it is around Much Wenlock, where it has been recorded several times since the early 19<sup>th</sup> century (W.P. Brookes), and it is still frequent in arable fields.



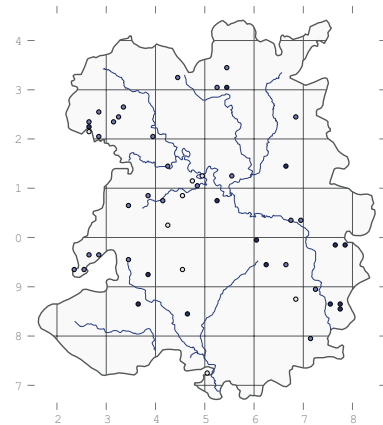
## *Sinapis alba* L.

### White Mustard

Archaeophyte. Scattered. Stable. Arable fields.

First record: Williams, c. 1800, 'cornfields, but not so common as *Sinapis arvensis*.'

Occasional in field margins and on roadsides. There are recent records for it in arable fields at Berrington, planted as pheasant cover at Cotton Hall (Trueman, 2010), and in a wheat field at Birdsgreen.



## *Eruca vesicaria* (L.) Cav.

### Garden Rocket

Neophyte. Rare.

By the Severn at Monkmoor (SJ5213, R.J. Swindells, 2004).



***Erucastrum gallicum***  
(Willd.) O. Schulz

**Hairy Rocket**

Neophyte. Rare. Casual. Waste ground.

Just two records: on a pavement in Oswestry (SJ293297, B. Davies & M.E. Roberts, det. E.J. Clement, 1982) and on a pavement by the A41 near Prees Heath (SJ556382, T.C.G. Rich, 1986, NMW).

***Hirschfeldia incana* (L.)**

Lagr.-Fossat

**Hoary Mustard**

Neophyte. Rare. Casual. Waste ground.

Just two records: on waste ground at Wombridge (SJ696115, W.A. Thompson, conf. E.J. Clement, 1982) and on waste ground at Hadley (SJ668114, R.M. Stokes, 1998, BIRM).

***Coincya monensis* (L.)**

Greuter & Burdet

**Wallflower Cabbage**

Neophyte. Rare. Casual. Waste ground.

There are two old records of ssp. *cheiranthos* (Vill.) Aedo, Leadlay & Munoz Garm.: on waste ground at Benthall (G. Potts, 1923) and on the sidings of the old Shropshire & Montgomery Railway at Llanymynech (E.D. Pugh, 1964).

***Rapistrum rugosum* (L.)**

Bergeret

**Bastard Cabbage**

Neophyte. Rare. Casual. Waste ground.

Twenty plants on a spoil heap near Lawley (SJ676099, W.A. Thompson, 1982).

***Crambe hispanica* L.**

**Abyssinian Mustard**

Neophyte. Rare. Casual. Roadsides.

Several plants on the side of a road at Cherry Orchard (SJ507127, Whild, 2006, BIRM).

***Raphanus raphanistrum* L.**

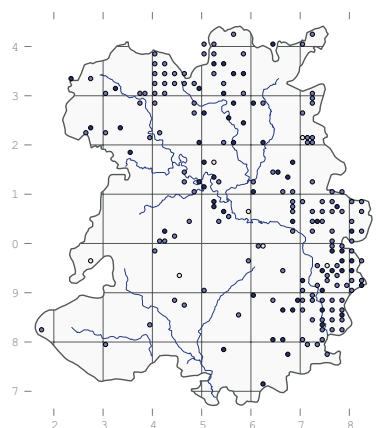
**Wild Radish**

Archaeophyte. Scattered. Stable. Arable fields and waste ground.

First records: Williams, c. 1800, 'cornfields in a gravelly soil about Albrightlee, Davenport House etc, Church Stretton.'

Occasional in arable fields, as in OV15 *Anagallis arvensis* at Filletts Farm, and it sometimes turns up on the sides of

roads, as at Cefn Coch (S. Swindells, 2013). All plants are var. *raphanistrum*.



***Raphanus sativus* L.**

**Garden Radish**

Just three records: at Huntington (M. Shanklin, 1963), on waste ground by the Maltings, Ditherington (J.A. Roberts, 1975) and on a roadside at Overley (R.M. Stokes, 1997).

***Sisymbrium irio* L.**

**London Rocket**

Neophyte. Casual. Last seen 1950. Waste ground.

There is just one record, from a roadside in Oswestry in about 1950 (E.R. Lloyd, Transactions of the Caradoc & Severn Valley Field Club 1956). There does not appear to be any specimen or confirmation, but Ellen Lloyd was a conscientious recorder. This plant is well established in London and has been found along railway lines, in dockyards and on roadsides in towns throughout the British Isles.

***Sisymbrium altissimum* L.**

**Tall Rocket**

Neophyte. Rare. Stable. Waste ground.

First record: J.C. Melvill, 1914, 'by the ford, Meole Brace.'

Occasional on waste ground around Telford, where it was first recorded at Benthall by G. Potts in 1919 and was most recently found by J. Rapson at Trench Pool in 1987. Also recently found on waste ground in Shrewsbury (SJ499123, R.M. Stokes, 1994).

***Sisymbrium orientale* L.**

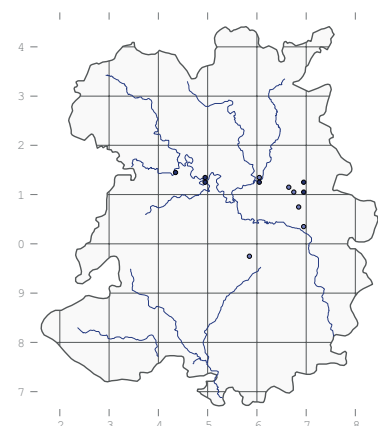
**Eastern Rocket**

Neophyte. Rare. Stable. Waste ground.

First record: G. Potts & A.A. Dallman, 1936, Presthope.

A persistent weed at the Allscott sugar beet factory, where it was first recorded

by H. & B. Walker in 1977 and most recently by J. Handley in 2012. It has also been found in the last few years on waste ground around Preston Montford (R.J. Swindells, 2012), Shrewsbury and Telford.



***Sisymbrium officinale* (L.)**

Scop.

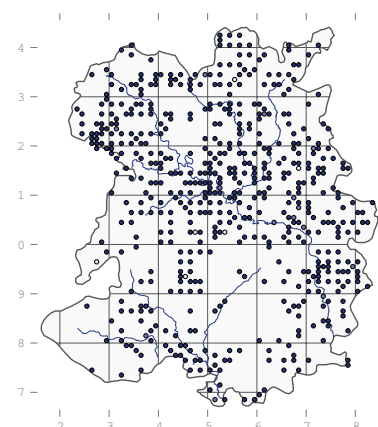
**Hedge Mustard**

Archaeophyte. Widespread. Stable. Roadsides, field margins and waste ground.

First record (as *Erysimum officinale*): Williams, c. 1800, 'sides of roads and on rubbish, common.'

Common, especially in the lowlands, in roadsides and field margins. It is recorded in OV14 *Urtica urens* community in arable fields at Rudge Heath (Trueman, 1981) and OV25 *Cirsium arvense* at Kingshead.

The var. *leiocarpa* was recorded by Perring in an arable field at Greenfields Farm, Hodnet, in 1977, and var. *periocarpum* by A.H. Wolley-Dod in a field near Prees in 1909; but neither of these is currently recognised in British Floras.



***Isatis tinctoria* L.**

**Woad**

Archaeophyte. Rare. Casual. Waste ground.

The only Shropshire record is of a casual on a roadside at Ashfields (SJ702264) by B.R. Fowler in 1977.

***Alliaria petiolata* (M. Bieb.)**

Cavara & Grande

**Garlic Mustard**

Native. Widespread. Stable. Hedgerows, woods, gardens.

First record (as *Erysimum alliaria*): Williams, c. 1800, 'hedges, common.'

A very common biennial that grows at the bases of most hedges in the county, with its rich green foliage being a notable feature early in the year and the dead skeletonised remains of second-year plants remaining just as recognisable into the autumn.

It is recorded in OV26 *Epilobium hirsutum* community on ditch banks at Longford; W6 *Salix* × *fragilis* woodland in Loamhole Dingle, by the Severn at Shrewsbury Castle and Shelton Rough; in a W8 *Fraxinus excelsior* hedgebank at Albrighton, ancient woodland at Redhill Coppice (Trueman, 1981) and scrub in a quarry at Stokes's Barn (Trueman, 1981); W21 *Crataegus monogyna* hedges by the Shrewsbury Canal at Uffington; and W24 *Rubus fruticosus* road verges at Abdon, Chatwall, Nobold and elsewhere. It is absent only from the highest hills, mainly because of a lack of ungrazed habitats in those areas.



***Teesdalia nudicaulis* (L.) R.Br.**

**Shepherd's Cress**

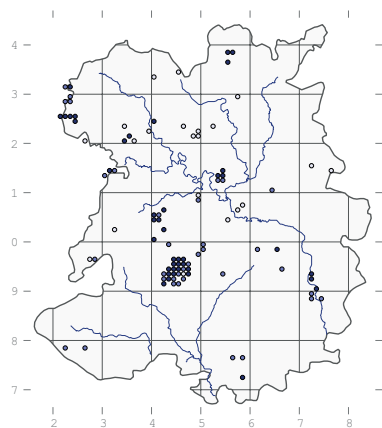
Native. Local. Decreasing. Axiophyte: upland acid grassland.

First record (as *Nasturtium petraea*): G. Bowles, 1632, 'in fields about Birch.'

Entirely restricted to one vegetation type: U1 *Rumex acetosella* grassland, which means that it is now found mainly on the hills, although it might once have been widespread in lowland grass-heath on the North Shropshire plain. It can still be found in this habitat at Knockin (A.K. Thorne, 2002) and Prees Heath. It is common on most of the Longmyndian hills, including Haughmond Hill and Earl's Hill but not, strangely, Lyth Hill, and it used to occur on the Sharpstones.

There are several sites for it in the west, including Moelydd (W. Whitwell, 1865 – R.A. Dawes, 2006) and it is found on Caer Caradoc (R.M. Serjeantson, <1909 – D.H. Wrench, 2009), at Quatford (Williams, c. 1800 – S. O'Donnell, 2006) and in several places around Bridgnorth. New sites have been found for it fairly regularly, but its seeds are apparently short-lived so it is considered vulnerable to changes in habitat. There is some evidence for a decline, but it has been and probably still is under-recorded because it is a spring ephemeral that is rarely recorded after May.

Although it is mainly found on the hills, it is generally a lowland plant, being found up to about 250 m on the Long Mynd. Good places to look for it include Bridgnorth Cemetery and the south-facing slopes of Haughmond Hill.



***Pachyphragma***

***macrophyllum* (Hoffm.) N.**

Busch

**Caucasian Penny-cress**

Neophyte. Rare.

Just one record: as a garden escape in rough grassland at Broncroft Castle (M.B. Fuller, 1986, det. E.J. Clement (*Watsonia* 13, 1981)).

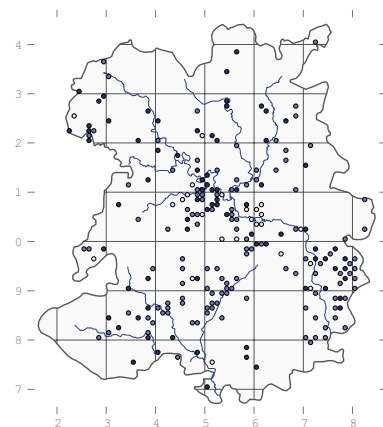
***Thlaspi arvense* L.**

**Field Penny-cress**

Archaeophyte. Scattered. Stable. Arable fields.

First record: Williams, c. 1800, 'gardens, pastures, cornfields, not uncommon.'

Occasional in arable field margins such as OV14 *Urtica urens* at Rudge Heath (Trueman, 1981). It has been recorded recently in fields of rape at Posenhall, maize at Lee Brockhurst, conservation birdseed at Cound Stank, and broad beans at Lower Wallop. It also turns up on disturbed soil, such as a roadside in Castlefields, Shrewsbury, in 1999 and the central reservation of the Shrewsbury bypass at Meole Brace (D.H. Wrench, 2009).



[*Microthlaspi perfoliatum* (L.) F.K.

Mey., Perfoliate Penny-cress

Listed by Diamond (1891) for Llanforda. Possibly it was in cultivation, or recorded in error.]

***Hesperis matronalis* L.**

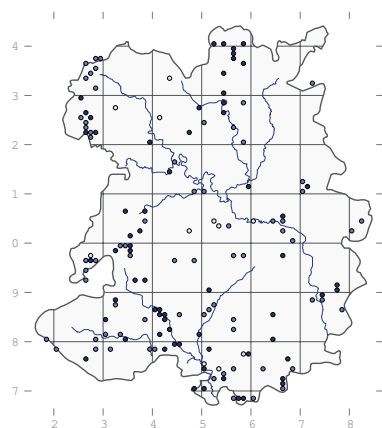
**Dame's Violet**

Neophyte. Scattered. Increasing. Roadsides, river sides, gardens.

First record: J.F.M. Dovaston, 1841, Caermaen, near Aston (near Oswestry)

Established on roadsides and riverbanks, for example in W8 *Fraxinus excelsior* woodland at Preston Rough. In some of these places it has been recorded for a long time. For instance, in Marrington Dingle it was

first recorded by Hamilton in 1894 and again by Perring in 1989. It has also been recorded on Snailbeach Mines since 1904 (R.D. Benson).



### *Cochlearia officinalis* L.

#### Common Scurvygrass

Native. Rare. Increasing. Road verges.

First record: Whild, 1999, Bayston Hill.

A roadside halophyte that has been recorded on the central reservation of the A5 around Shrewsbury, by the M54 in Wellington in 1999, and on the side of the A5 at Oswestry in 2010.

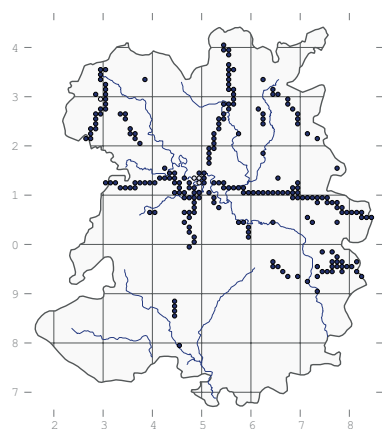
### *Cochlearia danica* L.

#### Danish Scurvygrass

Native. Local. Increasing. Road verges.

First record: A. Aikin, 1805, Shrewsbury castle walls, plentifully.

Once abundant on old walls and roofs in Shrewsbury and Oswestry, but it soon died out and was last seen in 1889 by W.E. Beckwith on 'old roofs near the Smithfield, Shrewsbury'. It only reappeared in the county in 1993, when E.M. Stephenson found it on the side of the A442 near Crudgington. Since then it has spread along most of the major roads.



### *Iberis amara* L.

#### Wild Candytuft

In gardens, occasionally found as a casual: Bayston Hill (R.D. Benson, 1894, SHYB).

### *Iberis umbellata* L.

#### Garden Candytuft

Neophyte. Rare. Casual. Gardens, waste ground.

First record: B.R. Fowler, 1977, 'few on spoil heap in field, Islington.'

A garden throw-out, recorded at Sharpstones Quarry (Fowler, 1980) and in OV21 *Plantago major* community in a garden in Pant (Trueman, 1981).

## Santalaceae

### *Viscum album* L.

#### Mistletoe

Native. Local. Stable. Orchards, hedges, woods.

First record: W. Salusbury, 1578, 'near the Ceiriog Bridge and all the way to Ludlow.'

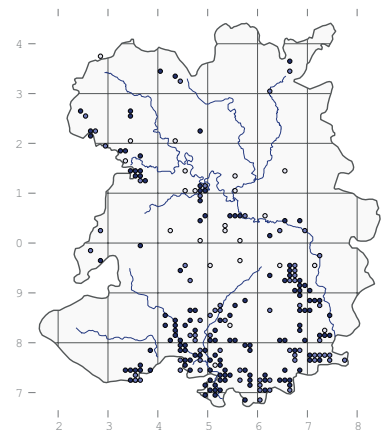
Semi-parasitic on various species of trees, mostly in the south of the county. Host species are not always reliably identified as it tends to be recorded in the winter, but the records suggest that the following are most common: *Crataegus monogyna* (29%), *Malus domestica* (24%), *Populus* spp. (mostly  $\times$  *canadensis*) (18%), *Tilia* spp. (mostly  $\times$  *europaea*) (8%), *Malus sylvestris* (5%), *Quercus robur* (4%), *Pyrus communis* (3%), *Acer campestre* (2%), *Corylus avellana* (2%), *Robinia pseudoacacia* (2%) and *Salix cinerea* (2%).

There are also individual records for it on *Acer pseudoplatanus*, *A. saccharinum*, *Alnus glutinosa*, *Fraxinus excelsior*, *Prunus domestica*, *Robinia pseudoacacia* and *Sorbus aucuparia*. Leighton (1841) gives an account of J.F.M. Dovaston trying to cause it to grow on many other species, without much success. He also reports that it was recorded on larch by 'an intelligent labourer' at Cold Weston in about 1841, but that must surely have been a different species.

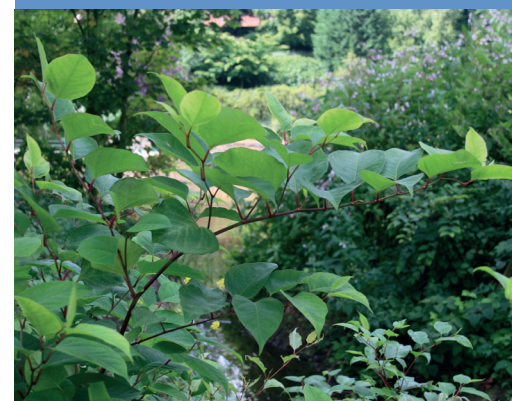
In the southernmost parts of the county it is frequent in hedgerow trees and is often present in apple orchards and gardens. A good place to see it is at Bromfield, where it is abundant in the grounds of Bromfield Farm (Ludlow Food Centre) but the huge *Populus*  $\times$  *canadensis* trees in the grounds of nearby Oakly Park, which used to be festooned with it, have been felled.

Further north, it grows in poplars around Meole Brace and in limes at Loton Park and Cound Hall. One of the most northerly places for it is Cole Mere, where it fills a small hawthorn bush at the entrance to the Country Park; and its altitudinal maximum is 323 m at Perkin's Beach (SO36559969, D.H. Wrench, 2014).

Mistletoe on oak arouses particular interest. There is a field marked 'Mizzletoe Oak' shown on the 1840 tithe map just below Ippikin's Rock on Wenlock Edge. Ellen Heywood-Waddington reported that there was a tree at Neen Savage in 1976, but the branch fell off a few years later. In 1939 L.C. Lloyd reported that there was mistletoe on a *Quercus robur* on the Dowles Estate.



*Persicaria lapathifolia*



*Fallopia japonica*



## Polygonaceae

*Persicaria campanulata*

(Hook.f.) Ronse Decraene

## Lesser Knotweed

Neophyte. Rare. Stable. Streamsides and edges of ponds.

First record: E. Hardy, 1974, Selattyn (SJ265339).

A garden escape that has been recorded as naturalised along a stream side at Selattyn and by a farm pond at Rowley (SJ306064, I.S. Thompson, 2009).

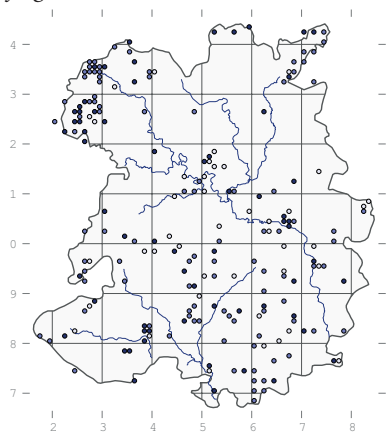
*Persicaria bistorta* (L.) Samp.

## Common Bistort

Native. Widespread. Stable. Grassland.

First records (as *Polygonum bistorta*): Williams, c. 1800, 'Astley; meadow adjacent to Battlefield Church; Stockton; meads about Pitchford, Underdale, Cleobury North, Sidbury; Home Barns near Sundorn.'

In old hay meadows and other lightly grazed grassland, usually on damp soils. It is now most often found on roadside verges, where it can persist and even thrive in MG1 *Arrhenatherum elatius* grassland. It can be very persistent: in some sites, such as at Battlefield and Cleobury North, it has been recorded for over 200 years. Several of the current sites are churchyards where it could have been planted, but more often these seem to be survivors of more widespread populations that once occurred in the surrounding fields. In Loamhole Dingle it grows in open W6 *Salix* × *fragilis* woodland.

*Persicaria capitata* (Buch.-Ham. ex D. Don) Gross

## Pink-headed Persicaria

One plant on brickwork at the edge of Priorslee Flash (R.M. Stokes, 2005), not far from hanging baskets where it had been grown.

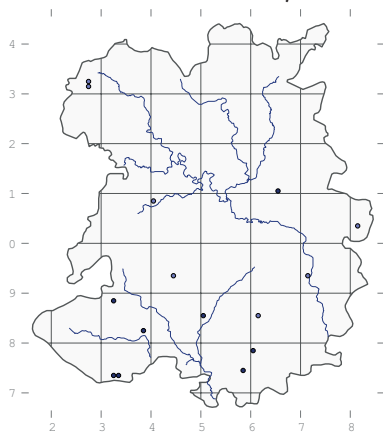
*Persicaria wallichii* Greuter & Burdet

## Himalayan Knotweed

Neophyte. Rare. Declining. Ponds and waste ground.

First record: Perring, 1976, Burwarton Park.

There are recent records for the side of the M54 at Wellington since 1998 (SJ658104, R.M. Stokes) a railway embankment at Weston, Stowe (P.R. Green, 1910), and Diddlebury.

*Persicaria amphibia* (L.)

Gray

## Amphibious Bistort

Native. Widespread. Stable. Open water, wetlands and marshy grassland.

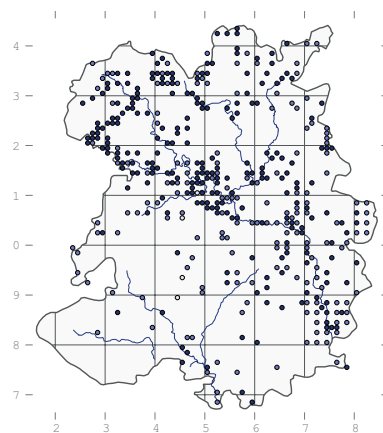
First record (as *Polygonum amphibium*): Williams, c. 1800, 'ponds and ditches, common.'

In a range of wetland habitats from open water to damp grassland. It is common in permanent open water, on the margins of meres, ponds, canals and rivers, often as a constituent of A8 *Nuphar lutea* vegetation, as at Betton Pool (M.J. Wigginton, 1979) and Bomere Pool; or as the main component of A10 *P. amphibium* at Brown Moss and Berrington Pool.

It is also recorded in MG8 *Caltha palustris* at Ruewood (Trueman, 1980); MG9 *Deschampsia cespitosa* at Cole Mere; MG10 *Holcus lanatus* at Brown Moss and Fenemere (C. Waker 1988); MG13 *Alopecurus geniculatus* at Brown Moss (Trueman, 1983) and Fenemere; M23 *Juncus effusus* at Newton Pool, Ruewood and elsewhere; and M27 *Filipendula ulmaria* at Berrington Pool, Cole Mere and the Mere.

Other habitats include OV26 *Epilobium hirsutum* at Berrington Pool; OV30 *Bidens tripartita* at Brown Moss, by the Severn at the English Bridge, and elsewhere; S6 *Carex riparia* at Blake Mere (Wigginton, 1979); S7 *C. acutiformis* in the Old River Bed;

S9 *C. rostrata* at Berrington Pool; S10 *Equisetum fluviatile* at Berrington Pool (Wigginton, 1979); S11 *C. vesicaria* at the Long Bog; S12 *Typha latifolia* in many places; S13 *T. angustifolia* at Bomere Pool; S14 *Sparganium erectum* at Berrington Pool, Betton Pool (Wigginton, 1979) and Brown Moss; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Cole Mere and Marton Pool, Chirbury; S27 *Comarum palustre* at Berrington Pool, Brown Moss and the Mere; and S28 *Phalaris arundinacea* in a drain at Hendre and at the Moors, Ellesmere.

*Persicaria maculosa* Gray

## Redshank

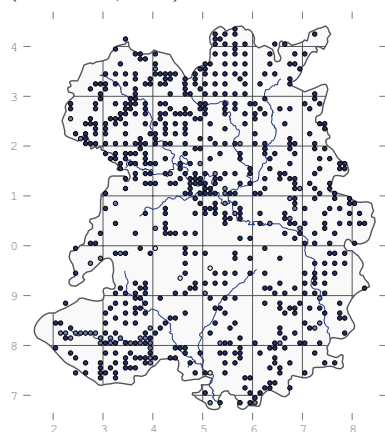
Native. Widespread. Stable. Arable margins, roadsides, wetlands.

First record (as *Polygonum persicaria*): Williams, c. 1800, 'sides of ditches and pools, common.'

An annual of disturbed, often muddy habitats. It grows in MG5 *Festuca rubra* at Ruewood Pastures; MG8 *Caltha palustris* at Crose Mere and Ruewood; MG10 *Holcus lanatus* at Ruewood; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* at Bomere Pool and Fenemere; OV10 *Senecio vulgaris* field margins at Eudon George, Lower Faintree and Welshampton (Trueman, 1981); OV30 *Bidens tripartita* in Aber Tanat oxbow lake (Trueman, 1981), at Marton Pool, Chirbury (M.J. Wigginton, 1979), Newton Mere and by the Severn in Shrewsbury; OV31 *Rorippa palustris* at Brown Moss and Fenemere (Wigginton, 1979); OV35 *Lythrum portula* at Newton Mere; and S14 *Sparganium erectum* by the Severn at Buildwas (Trueman, 1981).

Sometimes it is found in open, wet woodland such as W1 *Salix cinerea* scrub at Shomere Pool and the Mere; W4 *Betula pubescens* at Lin Can Moss; and W5 *Alnus glutinosa* woodland at Fenemere (Wigginton, 1979). It is found as high as 470 m on a roadside

at Mason's Bank in the Clun Forest (SO222880, 2011).



### *Persicaria lapathifolia* (L.)

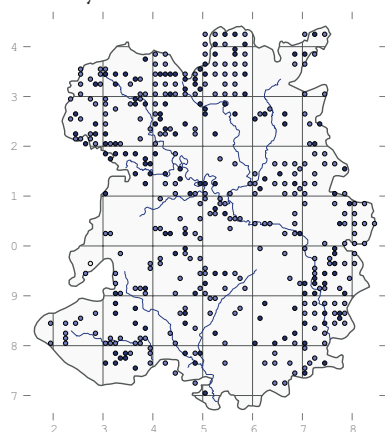
Gray

#### Pale Persicaria

Native. Local. Stable. Arable fields, pond margins, river banks.

First record: Williams, c. 1800, 'dunghills, common.'

In OV30 *Bidens tripartita* in Aber Tanat oxbow lake (Trueman, 1981) and on a mud bank by the Severn at the English Bridge, Shrewsbury; in OV32 *Ranunculus sceleratus* on the margin of Crose Mere and the side of the Roden at Tilley; S14 *Sparganium erectum* on the edge of the Severn at Buildwas (Trueman, 1981); and W10 *Quercus robur* on dried-out peat at Shrawardine Pool. It is also commonly found on arable field margins on damp, peaty or sandy soils in places like the edges of Puleston Common. It was recorded as high as 448 m (1,470 ft) in the Clun Forest by A. Wilson in c. 1940.



### *Persicaria hydropiper* (L.)

Spach

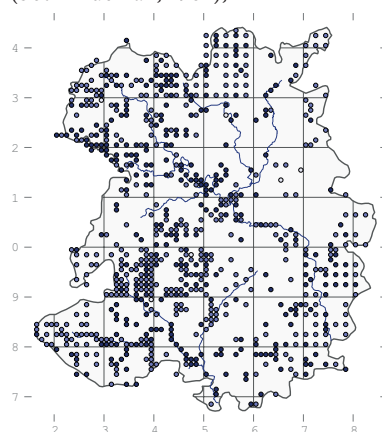
#### Water-pepper

Native. Widespread. Stable.

First record (as *Polygonum hydropiper*): Williams, c. 1800, 'sides of pools, common.'

In a variety of marshy grassland types, including MG10 *Holcus lanatus* in a

ditch at Ruewood; MG13 *Alopecurus geniculatus* at Fenemere; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *J. effusus* at Cole Mere (Wigginton, 1979) and Fenemere; and M27 *Filipendula ulmaria* in a clearing in Tunstall Wood. It is also a colonist of bare ground in OV10 *Senecio vulgaris* on a field margin at Welshampton; OV30 *Bidens tripartita* in Aber Tanat oxbow lake (both Trueman, 1981),



### *Persicaria mitis* (Schrank)

Assenov

#### Tasteless Water-pepper

Native. Rare. Casual. Ditches.

Just three records : W.H. Painter recorded it at Preston upon the Weald Moors in 1904; E.D. Pugh found it in ditch near Cole Mere in 1977; and M.B. Fuller collected it at Broncroft Lodge in 1979 (conf. E.J. Clement).

### *Persicaria minor* (Huds.) Opiz

#### Small Water-pepper

Native. Rare. Stable. Axiophyte: pools.

First record: H.M. Auden, 1907, Condover.

In OV31 *Rorippa palustris* community in seasonally wet hollows at Brown Moss, and damp hollows in agricultural grassland at Edgerley in a couple of places (SJ348179 & SJ349183, A.K. Thorne, 2003). It was first spotted at Brown Moss by R. Fitzgerald in 1984 and on the bank of the Shrewsbury Canal at Berwick Wharf (SJ542111, I. Haig-Brown, 1959, ABS).

### *Fagopyrum esculentum*

Mönch

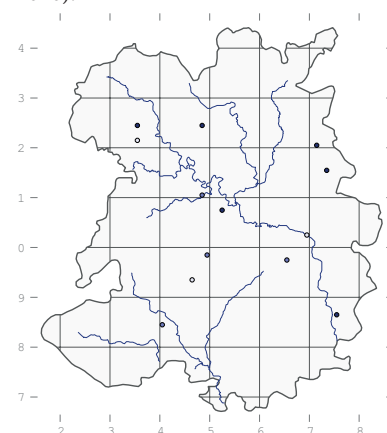
#### Buck-wheat

Neophyte. Rare. Casual. Arable fields.

First record: A. Aikin, 1796, 'at the village of Kinnerley... several fields of fine buck-wheat.'

A former agricultural crop, now an occasional weed. There are recent

records of it as a market garden weed at West Felton, a potato field at Harper Adams (both T.F. Preece, 1992), the edge of a cereal field at Hampton Load (R.M. Stokes, 2001), and as a weed in a maize crop at Lilleshall (S. O'Donnell, 2010).



### *Polygonum arenastrum*

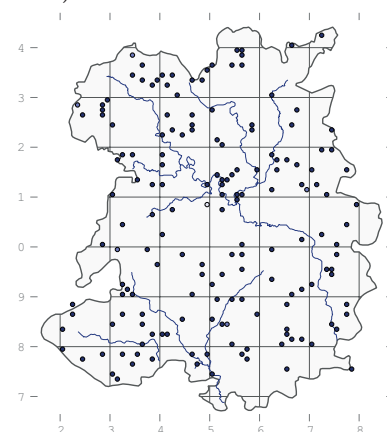
Boreau

#### Equal-leaved Knotgrass

Archaeophyte. Widespread. Stable. Arable fields, riverbanks, waste ground.

First record: J.C. Melvill, 1907, 'fallow field between Sharpstone Hill and Bomere Farm.'

Common by rivers and on shingle banks; also in arable fields, on roadsides and on bare or waste ground. Many plants might actually be *P. polycnemiforme* (Lecoq & Lamotte) Boreau, which has so far been recorded only in Shrewsbury (A.O. Chater, 2013).



### *Polygonum aviculare* L.

#### Knotgrass

Native. Widespread. Stable.

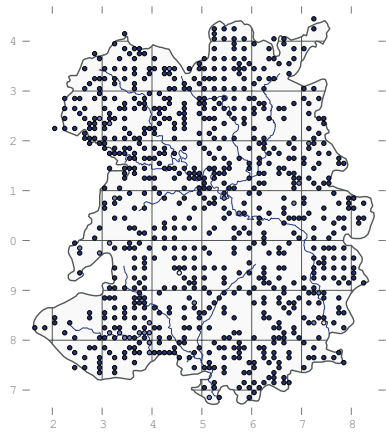
First record: Williams, c. 1800, 'footpaths and pastures, common.'

In field margins, roadsides and waste places throughout. It is recorded in arable fields in OV10 *Senecio vulgaris* at Lower Faintree and Welshampton (Trueman, 1981); OV13 *Capsella bursa-pastoris*



## Vascular plants

at Upton Cressett; OV14 *Urtica urens* at Edgmond (Trueman, 1981); OV15 *Anagallis arvensis* at Filletts Farm; OV18 *P. aviculare* at Edgmond (Trueman, 1981); and OV25 *Cirsium arvense* at Kingshead. It has also been found in OV30 *Bidens tripartita* on a muddy bank by the Severn by the English Bridge, and OV31 *Rorippa palustris* on the margin of Fenemere (M.J. Wigginton, 1979).



### *Polygonum rurivagum*

Jordan ex Boreau

#### Cornfield Knotgrass

Archaeophyte. Rare. Increasing. Bare ground.

Just two records: as a bird seed casual on a pavement in Shrewsbury (SJ493130, J.J. Day, conf. A.O. Chater, 2006) and on the edge of a field of



*Rumex maritimus*  
at Shrawardine Pool



*Stellaria neglecta* at Wyke

pasture at Edgerley (SJ346181, D.H. Wrench, conf. Whild, 2008, BIRM).

### *Polygonum agrestinum* Jord. ex Boreau

Just one record: in Shrewsbury (A.O. Chater, 2013).

### *Fallopia japonica* (Houtt.) Ronse Decraene

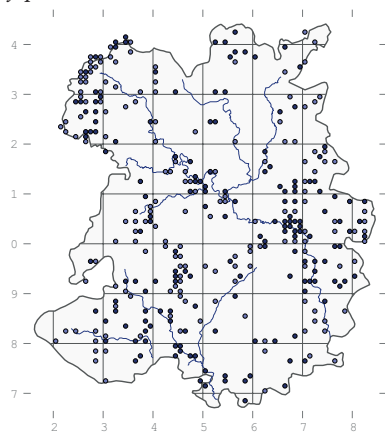
#### Japanese Knotweed

Neophyte. Scattered. Stable. Gardens, river banks, waste ground and field margins.

First record: J.C. Melvill, c. 1923, 'neighbourhood of Church Stretton, getting established in one or two places.'

Originally introduced into large gardens as an ornamental plant, but now widely established in towns and, less often, in the wild. Its main habitat is along rivers. Plants in Britain are a male-sterile clone, so it does not reproduce sexually, but it does hybridise (infrequently) with other species of *Fallopia*.

A typical habitat for it is on the flood plain of the Severn opposite Shrewsbury Castle, where there are some large stands which form a type of W6d *Sambucus nigra* woodland with this species making up the canopy in the absence of trees. It is not tolerant of dense shade, so it is less common in more natural situations. It is also recorded along the railway line at Wellington, in arable field margins at Lydham Heath (I.R. Bonner, 1968), Grinshill and Shifnal, around the old mine buildings at Snailbeach, around the walls of Shrewsbury Castle, and on roadsides in many places. All plants in Shropshire are *Fallopia japonica* var. *japonica*.



### *Fallopia* × *bohémica* (Chrtek & Chrtkova) J. Bailey (*japonica* × *sachalinensis*)

Known only at Ironbridge (SJ6703, J.P. Bailey, 1993) (Bailey, Child & Conolly 1996).

### *Fallopia sachalinensis* (F. Schmidt ex Maxim.) Ronse Decraene

#### Giant Knotweed

Neophyte. Scarce. Stable. Roadsides and river banks.

First record: A.P. Conolly, 1977, 'on the river bank upstream from the bridge, under Benthall Edge Wood' (LTR, NMW).

Well established several places in Ironbridge and Coalbrookdale (most recently recorded along Paradise Lane by R.M. Stokes in 1995), and also found in a field at Beckbury (W.E. Hutton, 1982), at Gallows Bank, Ludlow, and on a roadside at Caldý Bank.

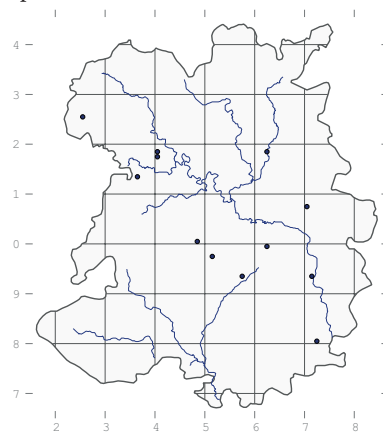
### *Fallopia baldschuanica* (Regel) Holub

#### Russian Vine

Neophyte. Scattered. Increasing. Gardens, quarries, waste ground.

First record: E.D. Pugh, 1981, 'in an old quarry between Treflach and Trefonen, where rubbish had been dumped.'

Commonly grown in gardens and occasionally established on old walls and waste ground, presumably as a garden throw-out. It does not seem to spread into semi-natural habitats.



### *Fallopia convolvulus* (L.) Á. Löve

#### Black Bindweed

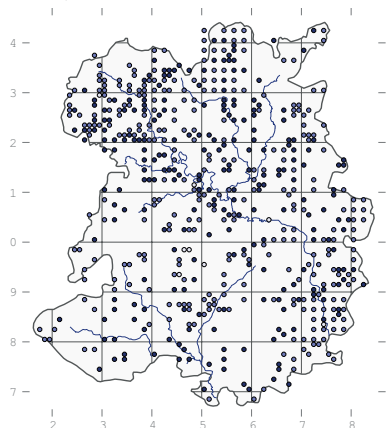
Native. Widespread. Stable. Arable fields.

First record: Williams, c. 1800, 'Cornfields and hedges, common.'

A widespread weed of arable fields and disturbed ground, such as heaps of rubble, neglected corners of gardens and sometimes roadsides. As an arable weed it is unpredictable, but it has been recorded in sandy fields near Berrington Pool many times. It occurs in OV10 *Senecio vulgaris* community in fields at Lower Faintree and Eudon George.



A variety with slightly winged fruits, *Fallopia convolvulus* var. *subalatum* (Lej. & Courtois) D.H. Kent, was recorded by R.D. Benson at Pulverbatch and Stapleton in 1893 and elsewhere since then; it is easily confused with *F. dumetorum*, but that species has never been found in the county.



### *Rheum × rhabarbarum* L.

#### Rhubarb

Neophyte. Rare. Casual. Waste ground.

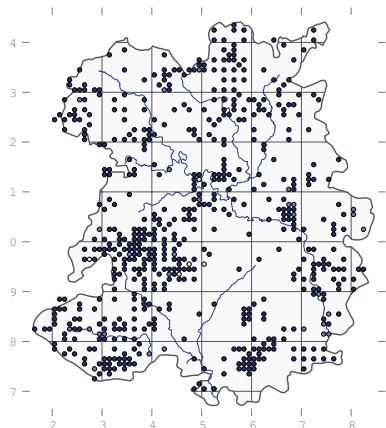
Established in the quarry at the top of Black Rhadley, near ruins on Abdon Burf, and in an old allotment at Madeley (G. Evans, 2004).

### *Rumex acetosella* L.

#### Sheep's Sorrel

Native. Local. Stable. Grassland and heath.

First record: Williams, c. 1800, 'meadows and pastures, common.'



Frequent in various types of grassland, particularly U1 *R. acetosella* on all the hills and in lowland grass-heaths such as Prees Heath. It is also recorded in CG2 *Avenula pubescens* on Moelydd; H8 *Ulex gallii* in Carding Mill Valley (Trueman, 1981); M22 *Juncus subnodulosus* at Sweeny Fen (A. Hillman, 1992); OV23 *Dactylis glomerata* on a road verge at Cosford and in Dorrington Sand Quarry (both

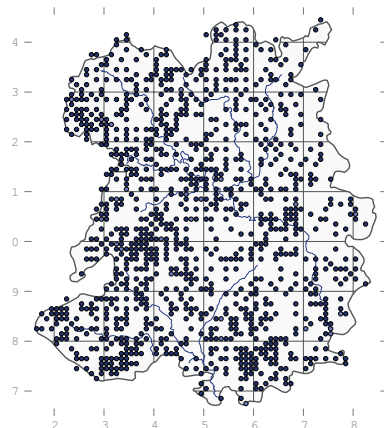
Trueman, 1981); OV27 *Epilobium angustifolium* at Prees Heath; U2 *Deschampsia flexuosa* at the Bog (Trueman, 1981); U4 *Agrostis capillaris* at Cwm Collo and on the Long Mynd; U5 *Nardus stricta* on the Stiperstones; U20 *Pteridium aquilinum* in Gogbatch (C.M. Owen, 1983); W23 *Ulex europaeus* at Mellin-y-Grogue and Old Oswestry; and W24 *Rubus fruticosus* hedges at Mellin-y-Grogue.

### *Rumex acetosa* L.

#### Common Sorrel

Native. Widespread. Stable. Grassland.

First record: Williams, c. 1800, 'dry pastures and ditch banks, common.'



Frequent in grassland such as CG2 *Avenula pubescens* at Jones's Rough; CG10 *Helianthemum nummularia* on Llynclys Hill; MG1 *Arrhenatherum elatius* at Buildwas Church, Blackfriars Meadow and Ropewalk Meadow; MG4 *Sanguisorba officinalis* in Lord's Meadows; in all stands of MG5 *Festuca rubra* and most stands of MG6 *Cynosurus cristatus* grassland; MG8 *Caltha palustris* at Crofts Mill (C. Walker, 1994), Melverley Farm and elsewhere; MG9 *Deschampsia cespitosa* at Cole Mere, Hill Houses and Oss Mere; MG10 *Holcus lanatus* at Hope Coppice, Old Oswestry and Fenemere (C. Walker, 1988); U1 *Rumex acetosella* on Earl's Hill (Packham, 1981); U4 *Agrostis capillaris* at Brown Clee, Rhos Fiddle and Shelve (Trueman, 1981); and OV37 *Festuca ovina* at Snailbeach (Trueman, 1981).

In wetlands it is found in M22 *Juncus subnodulosus* mire at Black Coppice, Crofts Mill (Walker, 1994), Sweeny Fen and elsewhere; M23 *J. effusus* at Cramer Gutter, Ruewood and other sites throughout; M24 *Cirsium dissectum* at Black Coppice and Cole Mere; M27 *Filipendula ulmaria* at Crose Mere, Marl Allotment, and the Moors, Ellesmere; OV30 *Bidens tripartita* at Marton Pool, Chirbury and White Mere (both M.J. Wigginton, 1979); OV32 *Ranunculus*

*scleratus* at White Mere; S26 *Phragmites australis* at Cole Mere; and S27 *Comarum palustre* at the Mere.

[*Rumex aquaticus* L., Scottish Dock

Listed by Griffiths (c. 1870) on the Long Mynd and by Phillips (1878) for the Shrewsbury district.]

### *Rumex hydrolapathum*

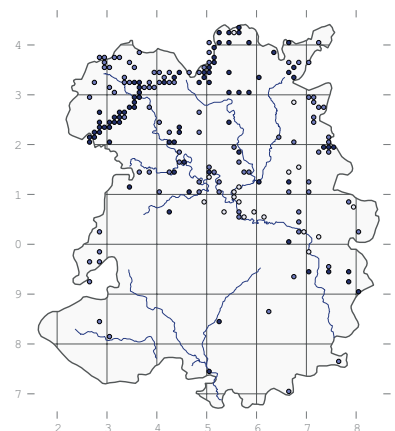
Huds.

#### Water Dock

Native. Local. Stable. Axiophyte: lake margins, swamps and canals.

First record (as *Acetosam maximam*): T. Johnson, 1639, 'at Shakerforth Mill.'

In a variety of wetland habitats from bare mud on lake margins to open woodland on peaty soils. It is recorded in W23 *Juncus effusus* rush-pasture at Cole Mere; OV30 *Bidens tripartita* at White Mere (both M.J. Wigginton, 1979); S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Oss Mere; and W5 *Alnus glutinosa* woodland at Cole Mere, Oss Mere and Morton Pool.



### *Rumex crispus* L.

#### Curled Dock

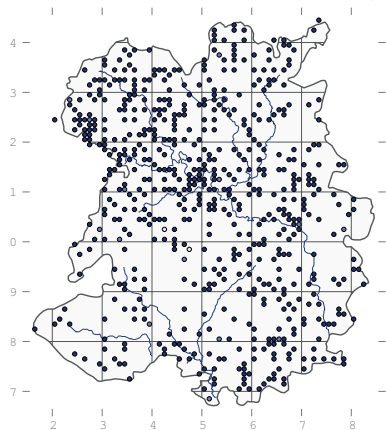
Native. Widespread. Stable. Fields, bare ground.

First record: Williams, c. 1800, 'pastures and rubbish, common.'

In a wide variety of habitats, usually where there are patches of bare ground, such as field gateways, seasonally inundated land, and roadsides. It is recorded in MG1 *Arrhenatherum elatius* at Wenlock Edge Car Park; MG10 *Holcus lanatus* on Old Oswestry and at Fenemere (C. Walker, 1988); MG13 *Alopecurus geniculatus* at Brown Moss (Trueman, 1983); M22 *Juncus subnodulosus* at Sweeny Fen (A. Hillman, 1992); OV23 *Dactylis glomerata* on a road verge at Cosford (Trueman, 1981); OV25 *Cirsium arvense* in a field margin at Kingshead; OV30 *Bidens tripartita*

## Vascular plants

and OV31 *Rorippa palustris* at Brown Moss; OV35 *Lythrum portula* around Newton Mere; S23 *Carex paniculata* at Fenemere (Walker, 1988); S24 *Calamagrostis canescens* at Fenemere (M.J. Wigginton, 1979); and U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005) and Lilleshall Quarry.

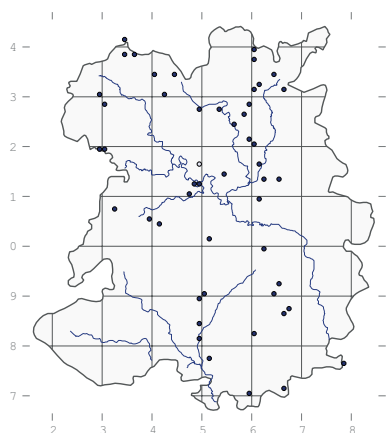


### *Rumex* × *pratensis* Mert. & Koch (*crispus* × *obtusifolius*)

Native. Occasional. Stable. Arable fields and grassland.

First record (as *R. pratensis*): Leighton, 1841, Hencott Pool.

Leighton treated this as a species, not a hybrid, but pointed out the similarities between it and its parents. It is not uncommon on roadsides and pastures, and there are recent records for places like a field of set-aside at Eaton Manor Farm (G.D. Kitchener, 2003), an arable field at Overton (I.P. Green, 2009) and Crose Mere.



### *Rumex conglomeratus* Murray

#### Clustered Dock

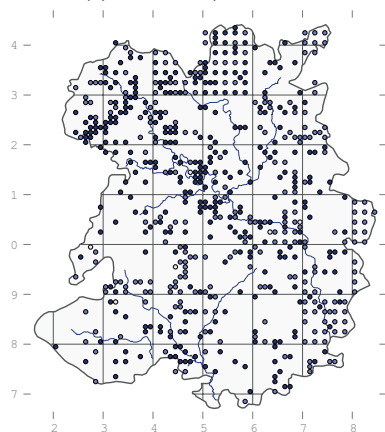
Native. Widespread. Stable. Ditches, swamps, damp grassland and wet woods.

First records (as *R. acutus*): Leighton, 1841, Hencott Pool and banks of the river Severn.

In a variety of wetland habitats including MG8 *Caltha palustris* and MG9

*Deschampsia cespitosa* grassland at Crose Mere; MG10 *Holcus lanatus* at Broncroft, Brown Moss and Ruewood; M22 *Juncus subnodulosus* at Crose Mere and Sweeny Fen; M23 *Juncus effusus* at Cole Mere (M.J. Wigginton, 1979) and Fenemere; M27 *Filipendula ulmaria* at Berrington Pool, Lower Netchwood and Marl Allotment; OV26 *Epilobium hirsutum* at Bomere Pool; OV30 *Bidens tripartita* at Aber Tanat oxbow lake (Trueman, 1981), Marton Pool, Chirbury (Wigginton, 1979) and by the Severn in Shrewsbury; and OV31 *Rorippa palustris* at Fenemere (Wigginton, 1979).

In swamps it is found in S14 *Sparganium erectum* at Brown Moss; S17 *Carex pseudocyperus* on the muddy margins of Oxon Pool; S24 *Calamagrostis canescens* at Fenemere; and S27 *Comarum palustre* at Berrington Pool (Wigginton, 1979). It often persists in wet woods such as W1 *Salix cinerea* at Berrington Pool; W5 *Alnus glutinosa* at Cole Mere, White Mere and elsewhere; W7 *Lysimachia nemorum* at Upper Vessons; and W8 *Fraxinus excelsior* on Llyncllys Hill. Lowland: up to about 320 m at the Hollies (SJ3802, 1997).



### *Rumex* × *abortivus* Ruhmer (*conglomeratus* × *obtusifolius*)

Just one record: 'landward edge of pond at Newton-on-the-Hill' (F.H. Perring, 1975).

### *Rumex sanguineus* L. Wood Dock

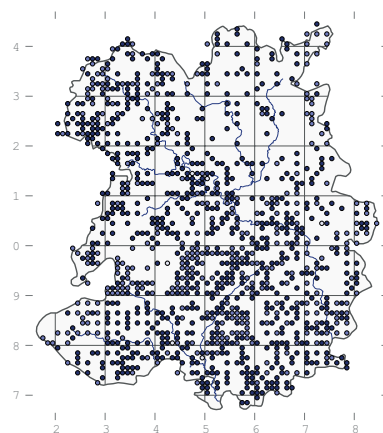
Native. Widespread. Stable. Woods,

First record (as *R. sanguineus* var. *viridis*): Williams, c. 1800, 'moist ditch-banks, common.'

Frequent in woods, hedges and damp habitats. It is recorded in MG1 *Arrhenatherum elatius* grassland along a farm track at Brockton, Worthen, and in a hedgebank at the Speller; M23 *Juncus effusus* at Cramer Gutter; OV26 *Epilobium hirsutum* at Berrington Pool;

S14 *Sparganium erectum* at Betton Pool (both M.J. Wigginton, 1979).

In woods it is found in W1 *Salix cinerea* carr at Calcott Moss; W5 *Alnus glutinosa* at Brownheath Moss, Cole Mere and elsewhere; W6 *Salix* × *fragilis* at Loamhole Dingle and by the Severn at Shrewsbury Castle; W7 *Lysimachia nemorum* at Fastings Coppice; W8 *Fraxinus excelsior* at Haughmond Abbey Wood, Round Oak, Stevenshill and elsewhere; W9 *Sorbus aucuparia* at Betchcott Hollow; W10 *Quercus robur* at Bannister's Coppice and Oss Mere; and W21 *Crataegus monogyna* scrub on Earl's Hill.



### *Rumex* × *dufftii* Hausskn. (*obtusifolius* × *sanguineus*)

Just one record: in the Quarry, Shrewsbury (SJ485126, Q.J. Groom, conf. G.D. Kitchener, 2013).

### *Rumex obtusifolius* L. Broad-leaved Dock

Native. Widespread. Stable. Path sides, disturbed ground and river sides.

First record: Williams, c. 1800, 'pastures and ditch banks, common.'

Common in damp grasslands, including MG1c *Filipendula ulmaria* grassland by the Severn in Shrewsbury; MG8 *Caltha palustris* by Crose Mere; MG10 *Holcus lanatus* at Hope Coppice, Ruewood and Fenemere; M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991); M23 *Juncus effusus* at Black Coppice.

In more ruderal situations it is found in OV10 *Senecio vulgaris* on waste ground at Shifnal; OV13 *Capsella bursa-pastoris* on a road verge at Priorslee (both Trueman, 1981; OV15 *Anagallis arvensis* in an arable field at Filletts Farm; OV24 *Urtica dioica* on a mud bank by the Severn in Shrewsbury; OV25 *Cirsium arvense* in a field margin at Stockton, Norton (Trueman, 1981); OV26 *Epilobium hirsutum* at Longford and Wollerton; OV30 *Bidens*

*tripartita* in the oxbow lake at Aber Tanat (Trueman, 1981), by the Severn, at Newton Mere and elsewhere; OV32 *Ranunculus sceleratus* on the margin of Crose Mere and by the Roden at Tilley; and S17 *Carex pseudocyperus* swamp on the muddy sides of Oxon Pool.

It also occurs in woods such as W5 *Alnus glutinosa* at Shrawardine Pool, White Mere (M.J. Wigginton, 1979) and elsewhere; W6 *Salix* × *fragilis* by the Severn opposite Shrewsbury Castle; W8 *Fraxinus excelsior* on a road verge at Albrighton, at Craig-Ilwyn, and in a Green Lane at Round Oak; and W24 *Rubus fruticosus* scrub on a verge at Abdon.



[*Rumex palustris* Smith, Marsh Dock

Occasionally mis-recorded for the following species, as by W. Phillips (1878) at Hencott Pool and by A.D. Skelding at Shrawardine Pool in 1951.]

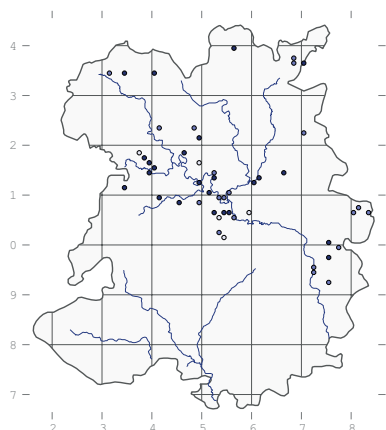
### *Rumex maritimus* L.

#### Golden Dock

Native. Local. Stable. Axiophyte: pools.

First records: Williams, c. 1800, 'on the south-east side of Hencott Pool; by the side of Eaton Mascott pool.'

On bare mud on the edges of meres and ponds. It is recorded in M23 *Juncus effusus* on the margin of Ebnaal Pool (Trueman, 1981); OV31 *Rorippa palustris* at Venus Pool; and S17 *Carex pseudocyperus* swamp at Shrawardine Pool.



## Droseraceae

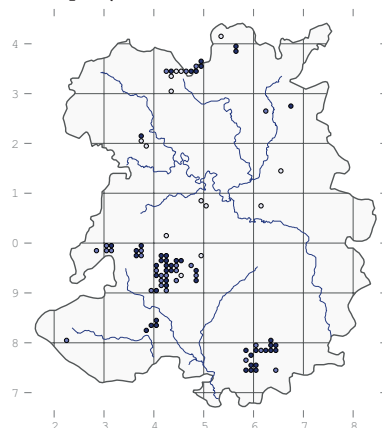
### *Drosera rotundifolia* L.

#### Round-leaved Sundew

Native. Local. Stable. Axiophyte: bogs.

First record: Williams, c. 1800, 'bogs, common.'

In M2 *Sphagnum fallax* mires at Brown Moss, Clarepool Moss, and most other lowland raised mires. In the uplands it occurs in a more diverse range of communities, including M10 *Carex dioica* on Titterstone Clee (A.K. Thorne, 1999); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* at Gogbatch (C.M. Owen, 1983); and M23a *J. acutiflorus* on Stapeley Hill (Trueman, 1981).



### *Drosera* × *obovata* Mert. & Koch (*rotundifolia* × *anglica*)

Formerly at Clarepool Moss (R.M. Serjeantson, 1882, SHY – Sinker, 1962, SHY) and Wem Moss (F. Rose, 1960, NMW).

### *Drosera anglica* Huds.

#### Great Sundew

Native. Rare. Decreasing. Axiophyte: bogs.

First record: W. Coote, 1632, 'by Ellesmere, by the wayside.'

There is only one recent site, at Wem Moss, where it was first recorded by E.A. Wilson in 1950 and seen regularly until 1998 (Whild), but after that it died out as the bog scrubbed over and became drier. It was growing in M2b *Sphagnum fallax* community on the edges of bog pools (Trueman, 1981). Efforts to restore the mire since then have been ineffective.

In the past it was recorded at Bomere Pool (F. Dickinson, c. 1900), Clarepool Moss (W. Phillips, 1878 – K.K. Bell, 1976), Gravenhunger Moss (R. Garner, 1844), Lyneal Moss (W.E. Beckwith, 1889 – J.W. Heath, 1894), Prees

Heath (A.H. Wolley-Dod, 1900 – J. Ramsbottom, 1907), Rednal Moss (E. Williams, 1797 – W.A. Leighton, 1841), the Mere at Ellesmere (W. Coote, 1632) and Whixall Moss (J.E. Bowman, 1835 – Sinker, 1970).

### *Drosera intermedia* Hayne

#### Oblong-leaved Sundew

Native. Rare. Decreasing. Axiophyte: bogs.

First record (as *D. longifolia*): Williams, 1798, 'upon Shomere Moss near Condover, plentifully.'

Just one recent site, at Wem Moss, where it was first found by E.M. Rutter in 1957 and was last recorded in 1999 by M.A. Bodley and A.T. Cole, who counted 30 plants. It was always rarer there than *D. anglica* but it persisted in peaty hollows at the northern end of the site until the lack of management led to the site scrubbing over almost entirely.

In the past it was also known at Bomere Pool (J. Evans, 1805 – W.E. Beckwith 1880), Clarepool Moss (Beckwith, 1880 – O.M. Feilden, 1909), Cold Hatton Moss (T.C. Eyton, 1841), Gravenhunger Moss (R. Garner, 1844), Hine Heath (Evans, 1805), Rednal Moss (Leighton, 1841), Shomere (until R.M. Serjeantson, 1878) and Whixall Moss (J.E. Bowman, 1841 – G.R. Jebb, 1918).

## Caryophyllaceae

### *Arenaria serpyllifolia* L.

#### Thyme-leaved Sandwort

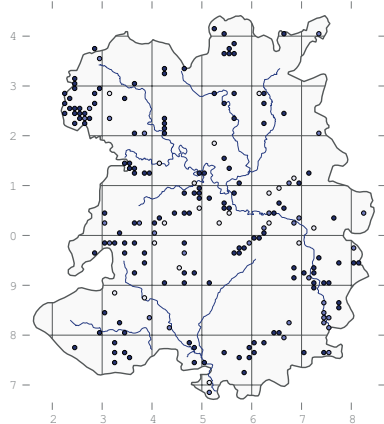
Native. Local. Stable. Grassland, bare ground.

First record: Williams, c. 1800, 'walls, courts and corn-fields, common.'

An annual of bare sandy or stony ground, especially in places which are prone to drought in the summer. It is recorded in CG2 *Avenula pubescens* at Craig Sychtyn, Jones's Rough and Moelydd; in both CG3 *Bromopsis erecta* and CG7 *Thymus polytrichus* on Moelydd and Wenlock Edge; MG5 *Festuca rubra* at Moelydd and Oretton; OV20 *Sagina procumbens* on old walls at Haughmond Abbey (Trueman, 1981); OV22 *Taraxacum officinale* on ruins at Viroconium; OV37 *Festuca ovina* on spoil heaps at Snailbeach (Trueman, 1981); U1 *Rumex acetosella* at Abbot's Castle Hill, Lilleshall Quarry and Prees Heath; and W24 *Rubus fruticosus* scrub at High Rock, Bridgnorth (Trueman, 1981).



The subspecies *leptoclados* (Reichb.) Nyman has been recorded many times, firstly by R.M. Serjeantson at Acton Burnell in 1877 (det. F.H. Perring, SHY).



### *Arenaria balearica* L.

#### Mossy Sandwort

A rockery plant that occasionally becomes naturalised beyond gardens. The only record is from a roadside in Church Stretton (SO456951) by J.A. Warren in 1990.

### *Moehringia trinervia* (L.)

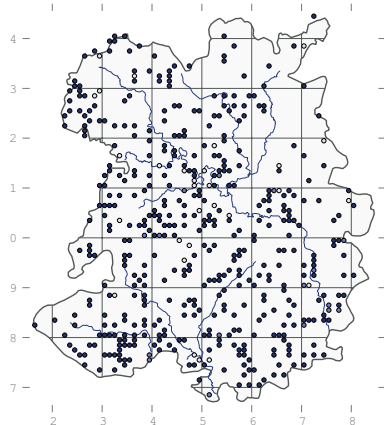
Clairv.

#### Three-nerved Sandwort

Native. Widespread. Stable. Woods and scrub.

First record (as *Arenaria trinervis*): Williams, c. 1800, 'ditch banks about Eaton Mascott, etc. Not uncommon.'

Common in woods such as W5 *Alnus glutinosa* at Sweat Mere (J.R. Packham, 1970); W6 *Salix × fragilis* woods at Hencott Pool, Morton Pool and Hencott Pool (Packham, 1970); W8 *Fraxinus excelsior* at Oaks Wood, Redhill Coppice (Trueman, 1981) and Stoke Wood; W10 *Quercus robur* on the Ercall (Trueman, 1981); and W24 *Rubus fruticosus* beech wood at High Rock, Bridgnorth (Trueman, 1981). A good place to see it is at Haughmond Hill, where it has been recorded by many people since Leighton's time.



### *Minuartia hybrida* (Vill.)

Schischk.

#### Fine-leaved Sandwort

Just one record (as *Alsine tenuifolia*): F. Dickinson, 1841 'fields near Sharpstones hill.'

### *Stellaria nemorum* L.

#### Wood Stitchwort

The only confirmed record for the county is by Hamilton at Belvidere Wood (Weirhill Wood) in 1897 (conf. F.H. Perring, SHY).

There are six other field records, some or all of which may be errors (possibly for *Myosoton aquaticum*). Leighton (1841) gives four: near Oswestry (T. Salwey), Lilleshall Abbey (R.G. Higgins), Ludlow (M. McGhie) and in a field at Paper Mills, Ludlow (McGhie). In 1877 Phillips recorded it at Sharpstones Hill and in 1901 A.R. Horwood recorded it at Marrington Dingle.

### *Stellaria media* (L.) Villars

#### Common Chickweed

Native. Widespread. Stable. Waste ground, arable fields

First record: Williams, ca. 1800, 'gardens, etc, common.'

Frequent in enriched, disturbed places such as gardens, arable fields, farmyards and roadsides. It is most often recorded in open vegetation communities such as OV10 *Senecio vulgaris* on waste ground at Shifnal and in an arable field at Welshampton (both Trueman, 1981); OV13 *Capsella bursa-pastoris* at Upton Cressett; OV14 *Urtica urens* at Rudge Heath (Trueman, 1981); OV20 *Sagina procumbens* on walls in Shrewsbury; OV23 *Dactylis glomerata* on road verges everywhere; OV30 *Bidens tripartita* on the margins of a field pond near Black Coppice; OV31 *Rorippa palustris* on the edge of Fenemere (M.J. Wigginton, 1979); and OV32 *Ranunculus sceleratus* around Crose Mere.

It is occasional in bare patches of ground in a variety of other habitats, including MG5 *Festuca rubra* at Cole Mere; MG13 *Alopecurus geniculatus* at Fenemere; M22 *Juncus subnodulosus* at Crose Mere; and M23 *Juncus effusus* at Cole Mere (the last two by Wigginton, 1979). At Earl's Hill it is rare in U1 *Rumex acetosella* grassland (A.K. Thorne, 2003). In woods it sometimes grows on tree bases or bare ground, and it is recorded in W5 *Alnus*

*glutinosa* at Cole Mere (Wigginton, 1979); W6 *Salix × fragilis* at Shelton Rough; W8 *Fraxinus excelsior* at Craig-llwyn; and a W24 *Rubus fruticosus* hedge at Chatwall.

### *Stellaria pallida* (Dumort.)

Pire

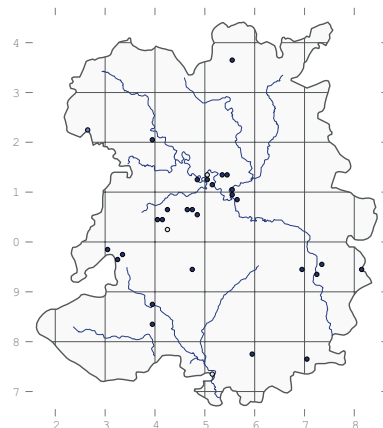
#### Lesser Chickweed

Native. Local. Stable. Axiophyte: acid grassland.

First record (as *S. apetala*): R.D. Benson, c. 1904, Pulverbatch.

A characteristic constituent of U1 *Rumex acetosella* grassland, almost entirely restricted to this habitat. It was largely overlooked in the past: Leighton (1841) did not record it and Sinker (1985) only lists it in two locations in the county. However, Hamilton (1909) recorded it at Underdale Fields and Judith Butts and Weyman recorded it at Ludford. There were then no records until 1970, when Perring found it at Attingham Park, and in 1976 P.M. Benoit recorded it just on the Shropshire side of the border on Llanymynech Hill.

Since then it has been found much more widely in U1 grassland in a variety of sites, both lowland and upland. It has been recorded at Abbot's Castle Hill (Trueman, 2005), Attingham Park, Bridgnorth Cemetery, Caer Caradoc (A.K. Thorne, 2002), Earl's Hill, Haughmond Hill, Hopesay Hill, Lyth Hill, Prees Heath, Stapeley Hill and elsewhere. In Tasley churchyard it grows in MG5 *Festuca rubra* grassland. It is often found in rather bare patches of grassland around rabbit burrows.



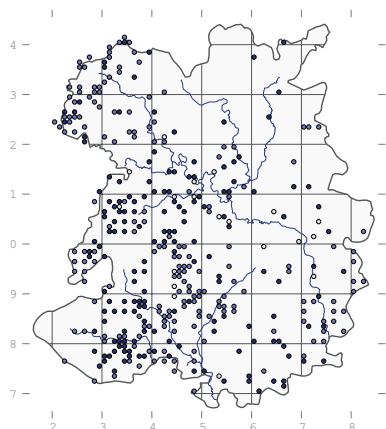
***Stellaria neglecta* Weihe****Greater Chickweed**

Native. Local. Stable. Axiophyte: hedges and woods.

First record (as *S. umbrosa*): T. Butler, May 1882, 'near Upper Cound' (SHY).

Frequent in hedges and woodland edges in the south and west of the county, and scattered in similar habitats elsewhere. It is recorded in MG1 *Arrhenatherum elatius* along a path edge at Shelton Rough; W6 *Salix × fragilis* in Loamhole Dingle; W10 *Quercus robur* woodland by a stream at Nant-y-myssels; and W24 *Rubus fruticosus* scrub on a roadside bank at Chatwall.

Leighton (1841) described *Stellaria media* as having 'stamens 3-5 or 10', which shows that he knew *S. neglecta* but considered it (as did others at the time) merely a form of common chickweed. The first records for the county, therefore, were made in 1882, when W.E. Beckwith wrote in the Journal of Botany that it was 'common in low damp woods in Shropshire.' It is an early spring plant, rarely recorded after the beginning of June. One of the best places to look for it is along the Mile Walk at Attingham, where it was first recorded by E.M. Rutter in 1955 (SHY). Lowland: up to about 320 m at Garn Bank (P.R. Green, 2010).

***Stellaria holostea* L.****Greater Stitchwort**

Native. Widespread. Stable. Hedges, woods and roadsides.

First record: Williams, c. 1800, 'hedges, common.'

Very common and often abundant in hedges; less so in woods. It is recorded in MG1 *Arrhenatherum elatius* road verges at Brandwood and Brockton, Worthen; MG5 *Festuca rubra* on a roadside at Guilden Down; M23 *Juncus effusus* at Brook Vessons; OV21 *Plantago major* in a garden in Pant (Trueman, 1981).

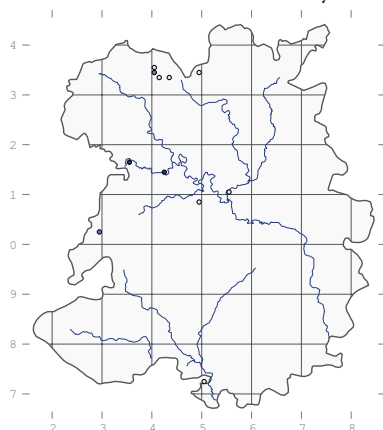
In woods it is found in W6 *Salix × fragilis* at Hencott Pool; W7 *Lysimachia nemorum* at Birchen Park and the Ercall (Trueman, 1981); W8 *Fraxinus excelsior* throughout; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* in Bushmoor Coppice, on Haughmond Hill and elsewhere; and W24 *Rubus fruticosus* hedges throughout the county.

***Stellaria palustris* Retz****Marsh Stitchwort**

Native. Rare. Decreasing. Axiophyte: swamps and fen.

First records (as *S. glauca*): Williams, c. 1800, 'by the side of Marton Pool, near Chirbury; at the east side of Colemere Mere.'

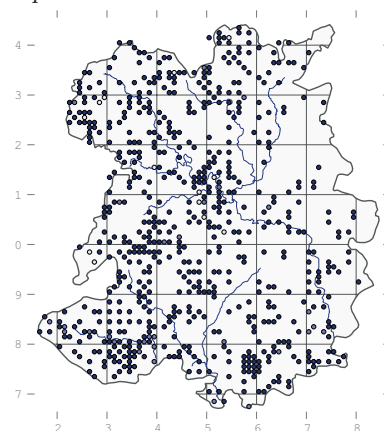
Most of the early sites for this species were meres. Leighton (1841) gives records by A. Bloxam at Blake Mere (SJ4133) and by Leighton himself from the north end of the Mere. In 1878 Phillips added Bomere Pool to the list. However, in 1880 Beckwith found it in a ditch in Attingham Park, which was presumably in the floodplain of the River Tern. Since then it has turned up in swamps near the Severn at Loton Park (W.V. Prestwood, 1978) and at Ford (A.K. Thorne, 2002). The only recent record for the meres was by Sinker in 1964 at Marton Pool. One site that doesn't fit either category is the Prees Branch Canal, where Phillips recorded it in the late 19<sup>th</sup> century.

***Stellaria graminea* L.****Lesser Stitchwort**

Native. Widespread. Stable. Grassland and roadside verges.

First record: Williams, ca. 1800, 'hedges and pastures.'

Occasional in grassland in meadows, roadsides, river banks, churchyards, etc. It is found in MG1 *Arrhenatherum elatius* at Ropewalk Meadow; MG5 *Festuca rubra* at Nant-y-myssels, Cole Mere, Marl Allotment and elsewhere; MG6 *Cynosurus cristatus* at Meverley Farm; MG8 *Caltha palustris* at Croft Mill (C. Walker, 1994); Meverley Farm, Morton Pool and elsewhere; MG9 *Deschampsia cespitosa* at Cole Mere, Hill Houses and Oss Mere; M22 *Juncus subnodulosus* at Crofts Mill (Walker, 1994); M24 *Cirsium dissectum* at Black Coppice and Cole Mere; M27 *Filipendula ulmaria* at Black Coppice, Lower Netchwood and Marl Allotment; OV30 *Bidens tripartita* in a pond near Black Coppice; and U4 *Agrostis capillaris* at Cwm Collo.



*Silene flos-cuculi* at Ruewood

***Stellaria alsine* Grimm****Bog Stitchwort**

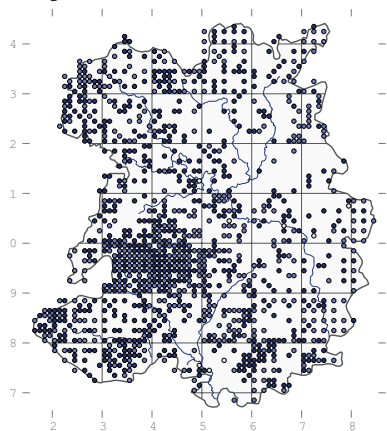
Native. Widespread. Stable. Ditches, marshy grassland, stream sides.

First record: Williams, ca. 1800, 'ditches and sides of pools.'

Common in a wide variety of wetlands, including hollows in grassland such as MG5 *Festuca rubra* on Haughmond Hill; MG8 *Caltha palustris* at Crose Mere and Melverley Farm; MG10 *Holcus lanatus* at Hope Coppice; MG13 *Alopecurus geniculatus* in a ditch at Ruewood (Trueman, 1980); and even in CG10 *Helianthemum nummularia* in Minton Batch (R. Tapper, 1983).

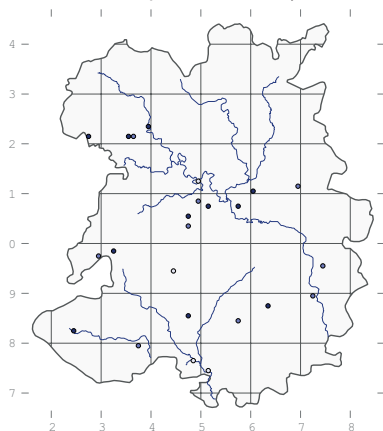
It is able to compete with taller vegetation in mires, and it is recorded in M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench & S. Ayliffe, 1991); M23 *Juncus effusus* at Cramer Gutter and Fenemere; and M35 *Montia fontana* at Boiling Well (Trueman, 1980). On the margins of pools it is similarly recorded in both open conditions and very dense vegetation, in OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979); OV32 *Ranunculus sceleratus* at Crose Mere; S14 *Sparganium erectum* at Brown Moss; S24 *Calamagrostis canescens* at Fenemere; and S27 *Comarum palustre* at Berrington Pool.

It can also tolerate dense shade and has been found in a variety of woodlands, where it occurs typically in rush-filled ditches along tracks. Types include W1 *Salix cinerea* at Shomere; W4 *Betula pubescens* at Lin Can Coppice; W5 *Alnus glutinosa* at Cole Mere and Shrawardine Pool; W6 *Salix* × *fragilis* at Holly Coppice on Haughmond Hill; W7 *Lysimachia nemorum* at Upper Vessons; and W10 *Q. robur* on Haughmond Hill.

***Cerastium arvense* L.****Field Mouse-ear**

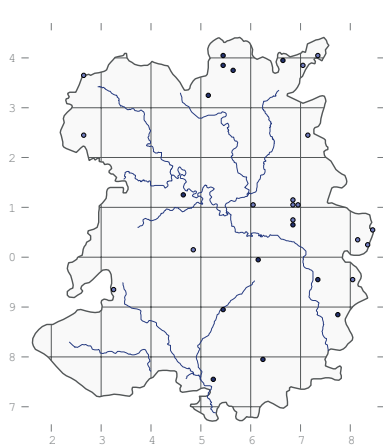
Native. Rare. Declining. Open grassland and waste ground.

First record: H. Spare, 1841, Oakly Park.



In short grassland on sandy soils, typically U1 *Rumex acetosella* in places such as Knockin Heath (R. Stokes, 1995), Boreton Bank (A.K. Thorne, 1996) and Old Grit (F. Gomersall & R. Mager, 2009). In other sites it seems more likely to occur in open vegetation communities of loose sand or disturbed soils, such as at Dorrington Sand Quarry, where E.M. Rutter found it in 1963 (SHY), or on the embankment of a railway line at Llanymynech (H. Webster, 1990).

Sites with reliable records but no recent sighting include Priest Weston (J. Roper, conf. E.D. Pugh, 1978), on a sandstone outcrop by the Severn Valley Railway at Upper Forge (W.A. Thompson, 1981-82) and on Clunbury Hill (R. Rowe, 1982).

***Cerastium tomentosum* L.****Snow-in-summer**

Widespread in gardens and often planted on walls and hedgebanks near to houses. The closest it comes to being naturalised is in some quarries, as in the old Whitehaven and Little Rock quarries (Sinker, 1966) – now absorbed

into Llyncllys Quarry; or More Quarry (J.A. Warren, 1980). It also grows along the lower stretches of Blakeway Hollow, near Much Wenlock.

***Cerastium fontanum* Baumg.**  
**Common Mouse-ear**

Native. Widespread. Stable. Grassland, swamps and waste ground.

First record: Leighton, 1841, 'fields, dry banks, etc.; common.'

Frequent in many types of grassland, including CG2 *Avenula pubescens* at Craig Sychtyn and Moelydd; CG3 *Bromopsis erecta* at Ippikin's Rock, Lea Quarry, Moelydd and Stokes's Barn (Trueman, 1981); CG10 *Helianthemum nummularia* at Minton Batch (R. Tapper, 1983); MG1 *Arrhenatherum elatius* on road verges everywhere, in Ropewalk Meadow and on Windmill Hill; in many stands of MG5 *Festuca rubra* throughout; MG6 *Cynosurus cristatus* at Becks Field, Cramer Gutter and elsewhere; MG8 *Caltha palustris* at Melverley Farm, Morton Pool and Ruewood Pastures; MG9 *Deschampsia cespitosa* at Cole Mere, Hill Houses and Oss Mere; MG10 *Holcus lanatus* at Brown's Corner, Larkfield Farm (both Trueman, 1981), Hope Coppice, Ruewood and Fenemere; OV23 *Dactylis glomerata* on road verges throughout; in all stands of U1 *Rumex acetosella*; and in U4 *Agrostis capillaris* on Brown Clea and at Shelve (Trueman, 1981).

It is also frequent in wetter habitats such as M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979), Morton Pool (D.H. Wrench, 1991), Porth-y-waen, Trefonen Marshes (both Trueman, 1981) and Sweeny Fen; M23 *Juncus effusus* at Cole Mere (Wigginton, 1979), Fenemere and Sweat Mere; M24 *Cirsium dissectum* at Cole Mere; M27 *Filipendula ulmaria* at Lower Netchwood (Trueman, 1981); OV28 *Agrostis stolonifera* on woodland tracks in Withybed Wood (J. Bingham, 1986); OV30 *Bidens tripartita* on the margin of Marton Pool, Chirbury (Wigginton, 1979); and S26 *Phragmites australis* fen in a ditch near Cole Mere.

On waste ground it is recorded in OV13 *Capsella bursa-pastoris* on a road verge at Priorslee, in OV21 *Plantago major* in a garden in Pant (both Trueman, 1981), OV22 *Taraxacum officinale* on ruins at Viroconium, and something akin to OV37 *Festuca ovina* on spoil heaps at Snailbeach (Trueman, 1981). It is rare in woods, but it does grow in W8 *Fraxinus excelsior* woodland on a long-disused track at the top of Stoke Wood.



***Cerastium glomeratum***

Thuill.

**Sticky Mouse-ear**

Native. Widespread. Stable. Arable fields and grassland.

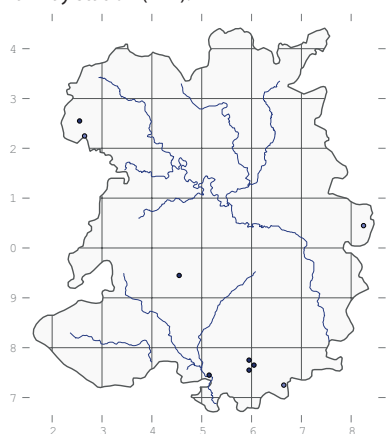
First record (as *C. viscosum*): Williams, c. 1800, 'pastures, walls etc., common.'

Common in damp habitats and on bare ground, as in MG10 *Holcus lanatus* at Fenemere; M22 *Juncus subnodulosus* at Sweeny Fen; OV13 *Capsella bursa-pastoris* arable fields at Upton Cressett; OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1982); OV23 *Dactylis glomerata* amenity grassland at Shelton; U1 *Rumex acetosella* throughout; and on walls in *Rubus fruticosus* scrub at Stevenshill.

***Cerastium diffusum*** Pers.**Sea Mouse-ear**

Native. Scarce. Increasing. Quarries and waste ground.

First record: C.M. Dony, 1959, Neen Sollars railway station (LTN).



Although it is quite common around the coast, this species rarely occurs inland. It grows on dry, sandy soils and is sometimes found as a casual along railway lines. The first recent record was in 1976, when B.R. Fowler found it in the goods yard at Albrighton railway station. Subsequently, E.D. Pugh & P.M. Benoit found it on Llanymynech Hill in

1977 (although this site is also claimed for Montgomeryshire). Trueman found it on loose spoil in the quarries on Titterstone Cleve in 1991, where it has since been seen several times; this is the best place to look for it as the population is large and persistent. Since then it has turned up at Ludlow cattle market (M. Lawley, 1999), Treflach Quarry (A.K. Thorne, 2006) and Bodbury Hill (J. Clayfield, 2007).

***Cerastium semidecandrum***

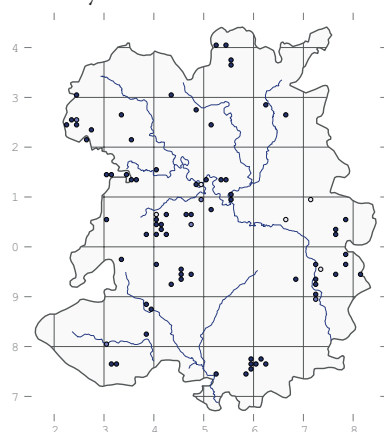
L.

**Little Mouse-ear**

Native. Local. Stable. Axiophyte: acid grassland.

First record: Leighton, 1836, Sharpstones Hill (BON).

Mostly in U1 *Rumex acetosella* grassland on most of the hills of South Shropshire and in dry, sandy and usually rabbit-grazed soils on the plain. There are quadrats for it in this community at Abbot's Castle Hill (Trueman, 2005), Attingham Park, Lyth Hill, Prees Heath, Rabbit Warren, Ryton Church and Titterstone Cleve (A.K. Thorne, 1999). It is a winter annual, usually at its best in early spring and dying back by summer. It occurs sporadically in dry, trampled grassland in a whole variety of places, including the Quarry in Shrewsbury (D.H. Wrench, 2010), on the towpath of the Montgomery Canal at Aston Locks, Ollerton and Cosford airfields (A.K. Thorne, 1999 and S. O'Donnell, 2009) and churchyards such as St Lawrence's, Church Stretton and St Margaret's, Ratlinghope. It is better recorded now than in Sinker's Flora, but probably has not really increased.

***Myosoton aquaticum*** (L.)

Moench

**Water Chickweed**

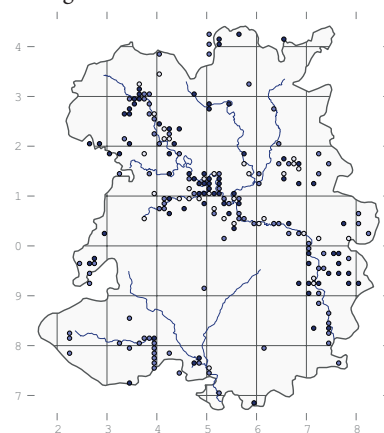
Native. Local. Stable. Axiophyte: riversides.

First record: Williams, 1800, 'moist hedges and sides of brooks.'

Occasional along eutrophic river banks on bare mud, tall herb or in woodland. It occurs along the length of the Severn and on all the major tributaries, especially on the north Shropshire plain; there is also one record for it by the Dee. Away from rivers, it is found around some of the meres, by ditches on the Weald Moors and on the banks of the Montgomery Canal.

It is recorded in OV24 *Urtica dioica* by the Severn in Shrewsbury, even when that vegetation that is dominated by *Impatiens glandulifera*; OV30 *Bidens tripartita* mud banks by the English Bridge; OV32 *Ranunculus sceleratus* on poached margins of the Roden at Tilley; S14 *Sparganium erectum* alongside the Severn at Buildwas (Trueman, 1981); W1 *Salix cinerea* at Shomere Pool; and W6 *Salix* × *fragilis* in Loamhole Digle.

Lowland: up to about 230 m by the R. Clun at Upper Duffryn (SO2282, Whild, 1983). Good places to look for it are along the Rea Brook in Shrewsbury and by the Tern at Attingham Park.

***Moenchia erecta*** (L.) P. Gärtn., B. Mey. & Scherb.**Upright Chickweed**

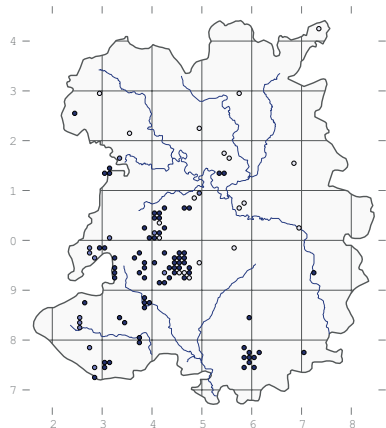
Native. Local. Stable. Axiophyte: upland grassland.

First records: Williams, c. 1800, Ebreywood, Harmer Hill, Kenley Common and Knockin Heath.

Characteristic of U1 *Rumex acetosella* grassland on all the Longmyndian hills, most notably the Long Mynd itself, where it is often abundant on south-facing slopes. It is often overlooked by surveyors because it is a spring ephemeral and has usually died back by the end of May, although there are records for it as late as the end of July in some years. New plants have been found as early as 2<sup>nd</sup> December (P.M. Benoit, the Lump, Priestweston, 1981). It is very rare on the Stiperstones

range but is found in abundance on Titterstone Clee, Caer Caradoc, Earl's Hill, Lyth Hill and Haughmond Hill, and, in the west, Stapeley Hill, Bulthy Hill and Moelydd.

One of the best places to see it is on the scree at the southern end of Earl's Hill. There are considerably more dots for it here than in Sinker's (1985) Flora, which could be the result of better recording or of a genuine increase, as most of the hills are heavily sheep-grazed in a way that seems entirely favourable for it. It no longer occurs on any lowland grass-heaths, such as Williams's sites at Kenley Common and Knockin Heath, or Gravenhunger, where R. Garner recorded it in 1844.



*Sagina nodosa* at Crose Mere



*Agrostemma githago* (Dan Wrench)

### *Sagina nodosa* (L.) Fenzl

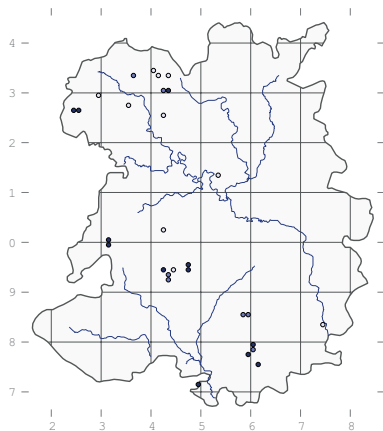
#### Knotted Pearlwort

Native. Rare. Declining. Axiophyte: calcareous flushes.

First record: Williams, c. 1800, 'on the boggy parts of Haughmond Hill.'

In calcareous flushes on mineral soil and peaty grassland inundated by base-rich surface water. It is recorded in MG8 *Caltha palustris* grassland by Crose Mere; M13 *Palustriella commutata* at Caer Caradoc (R. Meade, 2010) and Trefonen Marshes; and M35 *Montia fontana* on Caer Caradoc (Meade, 2010). It also still grows on Titterstone Clee (A.K. Thorne, 1999), where it was found by E. Heywood-Waddington in 1978; the Long Mynd (Trueman, 1990), where it was first recorded by A. Bloxam in 1870 (BIRM); Stapeley Hill (C. Walker, 1981 – J. Clayfield, 2010); and Overton Common.

There are older records from several other meres, including Blake Mere (J. Ramsbottom, 1907), Cole Mere, and the Mere (both R.M. Serjeantson, 1880, SHY); from Rednal Basin and the Weston Branch Canal at Weston Lullingfields (both W.E. Beckwith, <1889); and from Brown Clee (M.B. Fuller, 1979), Highley (W.H. painter 1907), and Pulverbatch (R.D. Benson, 1894, SHYB).



### *Sagina procumbens* L.

#### Procumbent Pearlwort

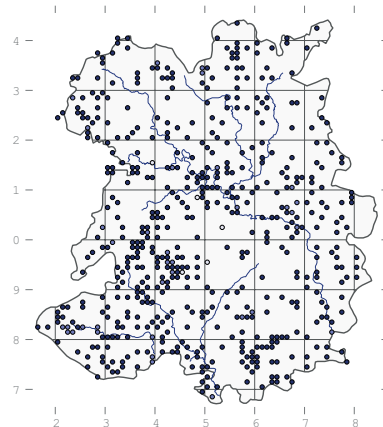
Native. Widespread. Stable. Walls, pavements and marshy grassland.

First record: Williams, c. 1800, 'paved courts, walks etc, common.'

Frequent on walls, pavements and compacted soil in urban areas and farmyards, but also present in a variety of semi-natural habitats. Urban plants are typically in OV20 *S. procumbens* community, as on walls in Shrewsbury; or OV22 *Taraxacum officinale*, as at Buildwas Sand Quarry (Trueman,

1982) or on the ruins at Viroconium. In more natural situations, it has been recorded in OV30 *Bidens tripartita* on the margin of White Mere; OV31 *Rorippa palustris* at Fenemere (both M.J. Wigginton, 1979); and OV32 *Ranunculus sceleratus* at White Mere.

In grasslands, it has been recorded in CG10 *Helianthemum nummularia* at Minton Batch (R. Tapper, 1983); MG5 *Festuca rubra* at Nant-y-mysells and by the stream in Townbrook Hollow; and in U1 *Rumex acetosella* at Attingham Park, Haughmond Hill, Titterstone Clee (Trueman, 1981) and the Long Mynd. It is also frequent in mires such as M6 *Carex echinata* in Colliersford Gutter (Tapper, 1983); M22 *Juncus subnodulosus* at Crose Mere (Wigginton, 1979); M23 *Juncus effusus* in several places on the Long Mynd (R. Tapper and C.M. Owen, 1983), Fenemere and Sweat Mere; and M35 *Montia fontana* at Boiling Well (Trueman, 1980), Carding Mill Valley and Lightspout Hollow (both Tapper, 1983). Finally, it sometimes grows in wet woodland, often on tree bases, as in W5 *Alnus glutinosa* at Top Pool and W6d *Sambucus nigra* on the banks of the Severn at Shelton Rough.



### *Sagina apetala* Ard.

#### Annual Pearlwort

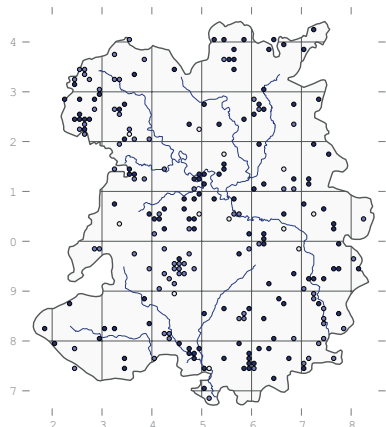
Native. Widespread. Stable. Dry grassland, walls, pavements.

First record: Williams, c. 1800, 'gravel walks, paved courts, etc. Knockin Heath, Abery Wood, Kinley Common, Harmer hill, Haghmon hill.'

Typical of rock outcrops and dry soils in U1 *Rumex acetosella* grassland, as on Abbot's Castle Hill and Ruyton Churchyard, and in urban habitats in OV20 *S. procumbens* community on old walls at Haughmond Abbey and newer ones in Shrewsbury. It is widespread but scattered throughout the county, often on walls by canals and in other humid places such as the higher hills.

*Sagina apetala* ssp. *apetala* was first recorded by C.M. & J.G. Dony in 1955 at Clee Hill (LTN); it appears to be as widespread as ssp. *erecta*, with a similar ecology.

It occurs as high as 537 m on the steps to the trig point at the summit of Brown Clee (SO593865, Whild & Trueman, 2011).

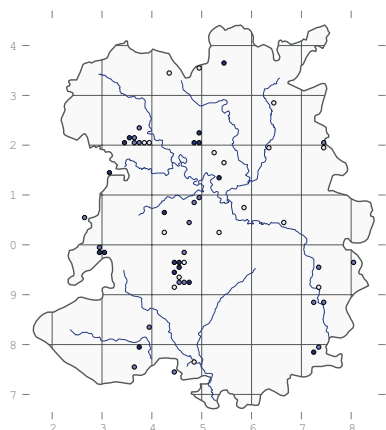


### *Scleranthus annuus* L.

#### Annual Knawel

Native. Local. Decreasing. Axiophyte: dry grassland, arable fields.

First record: Williams, c. 1800, 'sandy fields, common.'



On rock outcrops and thin soils on the hills, typically in U1 *Rumex acetosella* grassland, as on Haughmond Hill. In the past it was also common in sandy arable fields, but there are few such sites left; the only recent records for it in an arable field are from Pimhill Farm, where it has been known since 2006, and a field on Knockin Heath (one plant at SJ356215, R.M. Stokes, 1994). It is still fairly widespread on the hills, with recent records for Clunbury Hill (F.J. Gomersall, 2005), Hope Bowdler, the Lump, Priestweston (A.K. Thorne, 2002), various places on the Long Mynd, and Stapeley Hill (J. Clayfield, 2007). Most plants are *S. annuus* ssp. *annuus*, but ssp. *polycarpus* (L.) Bonnier & Layens has been recorded from Kempster's Hill

(SJ315140, Sinker, 1978, conf. P.D. Sell), Little Weston (SO290981, R. Rowe, 2004), Middleton near Priestweston (SO298990, J.M. Roper, 1982) and Bayston Hill (C.C. Babington, 1837, det. P.D. Sell, CGE).

### *Herniaria glabra* L.

#### Smooth Rupture-wort

Archaeophyte. Rare. Casual. Waste ground.

A few plants on waste ground near the Montgomery Canal at Queen's Head (SJ338268, R.M. Stokes, 2001), introduced with garden waste or construction material. The number of plants increased from 12 to 20 the following year, but then the location was resurfaced for a car park.

[*Herniaria ciliolata* Meld., Fringed Rupture-wort

William Phillips listed this in his Flora of Shrewsbury of 1878, but there are no details and it seems likely to have been a mistake, as this plant has never been recorded in Britain outside Cornwall. Neither Hamilton (1909) nor Sinker (1985) mention the record.]

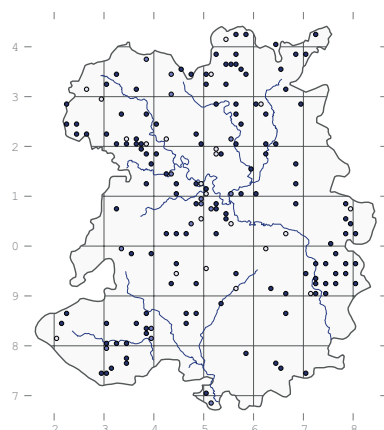
### *Spergula arvensis* L.

#### Corn Spurrey

Archaeophyte. Scattered. Stable. Axiophyte: arable fields.

First record: Williams, c. 1800, 'sandy cornfields and turnip fields, common.'

Sometimes abundant in arable fields, as in a field of carrots at Upper Astley in 2008. Trueman (1981) recorded it in OV10 *Senecio vulgaris* weed assemblage in an arable field at Welshampton. Occasionally it occurs in other habitats, such as an abandoned railway yard at Woofferton (M.M. Webster, 1975), a muddy river bank by the Welsh Bridge (R.M. Stokes, 2005), the verge of the new Nesscliffe Bypass in 2003, on rock outcrops in Ashes Hollow (J. Clayfield, 2000), and a heap of soil at Prees Heath in 2007. A. Wilson (1956) recorded it at 450 m in the Clun Forest.



### *Spergularia rupicola* Lebel ex Le Jolis

#### Rock Sea-spurrey

On the side of the A5 near Edgebold (SJ455113, B.J. Laney, 2009, conf. E.J. Clement, BIRM).

### *Spergularia marina* (L.)

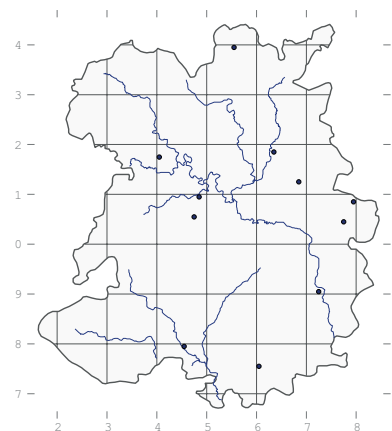
Griseb.

#### Lesser Sea-spurrey

Native. Local. Increasing. Roadsides.

First record: Whild, 2002, on the A49 near Whitchurch, SJ551396.

Occasional on the verges of salt-treated roads.



### *Spergularia rubra* (L.) J.S. & C. Presl

#### Sand Spurrey

Native. Local. Stable. Axiophyte: acid grassland.

First record (as *Arenaria rubra*): Williams, c.1800, 'sandy and gravelly roads and rocky ground, not uncommon. On Uckington heath, plentifully. On Lyth hill.'

Largely restricted to U1 *Rumex acetosella* grassland in places like Abbot's Castle Hill (Trueman, 2005), Carding Mill Valley (Trueman, 1981), Charlton Hill, Lyth Hill, Rabbit Warren and, in the lowlands, on Prees Heath. Sometimes it occurs along railways such as the old railway line at Aston Botterell, although that is now more of a sandy track, and the railway line at Hodnet (W.E. Beckwith, <1889); on salted road verges such as the Shrewsbury Bypass or the motorway at Overley (J.L. Mason, 2001); or tracks such as the one through Haughmond Abbey Wood (R.M. Stokes, 1996) or a path in Stepple Wood (D.M. Young, 1998). It is not restricted by altitude, occurring high on Titterstone Clee and the Long Mynd.



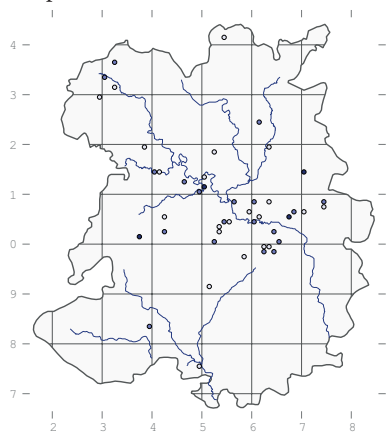
## *Agrostemma githago* L.

### Corncockle

Archaeophyte. Scarce. Casual. Arable fields,

First record: Williams, ca. 1800, 'cornfields, common.'

A former agricultural pest, common in the 18<sup>th</sup> and early 19<sup>th</sup> centuries but largely eliminated by the 20<sup>th</sup>, when Hamilton (1909) described it as 'not common, but often imported with seed corn'. There are recent records of it on the verge of the Shrewsbury bypass at Monkmoor (J. Martin, 1990), in rough grassland on MoD land at Donnington, Lilleshall (R.M. Stokes, 1994), on a restored mining spoil heap at Lord's Hill (1996), on a road verge in the Rea Brook Valley, Shrewsbury (J. Ing, 2004) and in a housing development at Lightmoor (2008). All of these are probably from seed mixes intended to create a colourful sward, but as these are all permanent grasslands it does not persist.



## *Silene nutans* L.

### Nottingham Catchfly

Native. Rare. Stable. Sandstone outcrops.

Still present at Hawkstone Park (S. O'Donnell, 1995) where it was first recorded by W. Wood in 1805. The site is described as 'very dry, almost dusty, thin soil along a path' (E.A. Williams, 1976). A record by W. Anstice at Apley Terrace in 1850 is considered unconfirmed by Oswald (Sinkler 1985, p. 20).

## *Silene vulgaris* Garcke

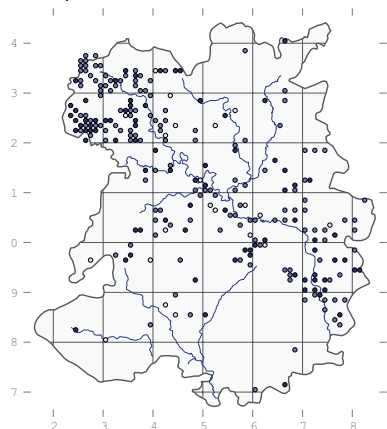
### Bladder Campion

Native. Local. Decreasing. Grassland, hedges.

First record (as *S. inflata*): Williams, c. 1800, 'pastures and ditch banks, common.'

Occasional in grassland on base-rich soils, often close to rivers. It is frequent

in the hedgerow by the Llangollen Canal near Welshampton, where it grows in MG1 *Arrhenatherum elatius* grassland, whereas at Windmill Hill and Hilltop Meadow it is rare in MG5 *Festuca rubra* grassland. Often on rather dry soils such as limestone quarries on Wenlock Edge and U1 *Rumex acetosella* grassland on Abbot's Castle Hill. There has been a clear decline in the last few decades and it is now quite rare in most parts of the county.



## *Silene schafta* Gmelin ex Hohen.

### Caucasian Campion

Neophyte. Rare. Stable. Walls of castles.

First record: E.C. Horrell, 1915, Ludlow Castle (det. A. Thellung, OXF)

Still present on the walls of Ludlow Castle (A.K. Thorne, 2001, conf. S.M. Walters, BIRM), where it has sometimes been mistaken for *Dianthus plumarius* (Clement 2000). A rare alien that has only been recorded in a few places in Britain.

## *Silene armeria* L.

### Sweet-William Catchfly

A rare garden escape: self-sown in J.C. Melvill's garden at Meole Brace in 1923 and in gravel outside the Station Inn, Horsehay (SJ680085, G. Halliday, 2010).

## *Silene noctiflora* L.

### Night-flowering Catchfly

Archaeophyte. Rare. Casual, Arable fields and roadsides.

First records: O.M. Feilden, 1894, 'two or three plants in a field near Halston' and Hamilton, 1894, 'fallow field, Bayston Hill.'

A former arable weed which still sometimes crops up as a casual, as in a garden on the Old Racecourse, Oswestry (M.E. Roberts, conf. P.M. Benoit, 1992) and on the sandy verge of the A5 near Wolf's Head (B.J. Laney,

2008). At Halston Hall it persisted until 1920 (Feilden) but in all its other sites there are only individual records: Buildwas (W.B. Allen, 1909), Caer Caradoc (C.L. Walton, 1909), in a chicken run at Tickwood (G. Potts, 1929), Hodnet (E.M. Rutter, 1956) and a field near Welshampton (F. Rose, 1959).

## *Silene latifolia* Poiret

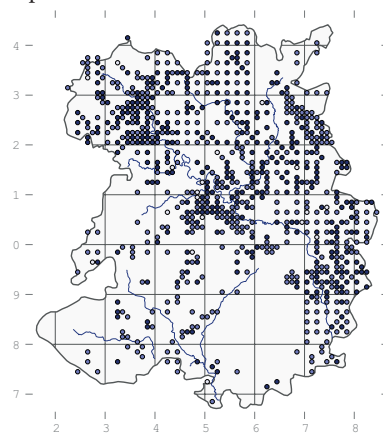
### White Campion

Native. Widespread. Increasing. Road verges and arable fields.

First record (as *Lychnis dioica* var.  $\beta$ , *flora albo*): Williams, 1800, 'pastures & hedges, common.'

Frequent in MG1 *Arrhenatherum elatius* grassland on road verges and the edges of paths, as along the track of the old Severn Valley Railway at Sutton, Shrewsbury, or by the Llangollen Canal at Welshampton. At Abbot's Castle Hill Trueman (2005) recorded it in eroded OV24 *Urtica dioica* and U1 *Rumex acetosella* grassland.

Leighton (1841) listed it as a colour variant of *S. dioica* and gave no records, but he later (p. 552) changed his mind and included *Lychnis vespertina* Sibth., again with no specific records. However, a specimen collected by E. Elsmere from his farm at Astley between 1822 and 1845 is mentioned in Hamilton's Flora, where the species is described as 'generally distributed but not abundant.' The native plant is ssp. *alba*.



## *Silene* $\times$ *hampeana* Meusel & K. Werner (*latifolia* $\times$ *dioica*)

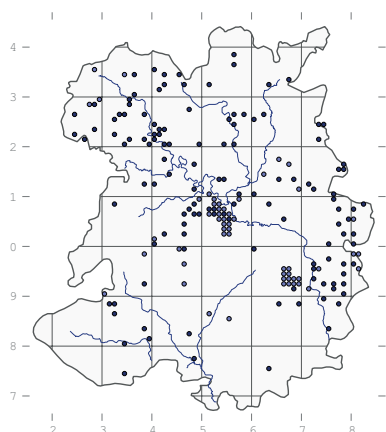
Native. Widespread. Stable. Roadsides and hedges.

First record (as *Lychnis dioica* var. *carnea*): Williams, c. 1800, 'pastures, common.'

In similar habitats to *S. latifolia*, on roadsides, woodland edges and hedge banks, rarely occurring in dense shade like *S. dioica*. It is widespread and sometimes difficult to distinguish

from the parents, being fertile and back-crossing freely. The first localised record was made by H.F. Leeke, who found it at Weeping Cross in 1940 and wrote 'this hybrid... is apparently not rare but it is infrequently recorded' (*Record of Bare Facts* 49, 1940). Sinker (1985) merely commented that the hybrid was common, although he did have some 18 records made for his Flora project between 1974 and 1983. It seems likely that it is widespread within the range of *S. latifolia*, but much less common and is perhaps in danger of being over-recorded if recorders rely too much on flower colour alone.

Both parents and the hybrid seem especially common at Hine Heath, where the soil is sandy and free-draining, and there is a patchwork of arable fields and secondary woodland. It is also notable along the Llangollen Canal near Welshampton and the lane at Eaton Mascott near Venus Pool.



### *Silene dioica* (L.) Clairv.

#### Red Campion

Native. Widespread. Stable. Woodland and hedges.

First record (as *Lychnis dioica* var. *a. rubello flore*): Williams, c. 1800, 'hedges, common'.



In a variety of woodland types, most typically W8 *Fraxinus excelsior* everywhere, but also recorded in W4 *Betula pubescens* at Sweat Mere (Trueman, 1980); W5 *Alnus glutinosa*

at Brownheath Moss and Sweat Mere (Packham, 1970); in many stands of W6 *Salix* × *fragilis*, as at Hencott Pool or in W6d *Sambucus nigra* beside the Severn near Shrewsbury Castle; W9 *Sorbus aucuparia* at Betchcott Hollow; W10 *Quercus robur* at Fron Wood, Mainstone, Holly Coppice (both Trueman, 1981) and the Mere; and in W24 *Rubus fruticosus* hedgebanks at Lower Wallop and throughout.

### *Silene gallica* L.

#### Small-flowered Catchfly

Archaeophyte. Rare. Stable. Arable fields.

First record: R.D. Benson, 1894, Bayston Hill (SHYB).

An annual of arable fields, especially on sandy soils. It has only been recorded in four places in the county; in each case it seems likely that it was brought in as a seed contaminant. In 1959 M.H. Bigwood and E.M. Rutter found it in a field gateway at Knockin Heath. It lasted there until 1979 (E.D. Pugh). In 1987 two plants appeared on the verge of the newly built Oswestry bypass, and in 2009 N. Button found a single plant in an organic field at Brynmawr.

### *Silene conica* L.

#### Sand Catchfly

One plant in a seed mix on the verge of the Oswestry bypass in 1987 (M. Wainwright, det. P.M. Benoit, 1987).

### *Silene coronaria* (L.) Clairv.

#### Rose Campion

Neophyte. Rare. Increasing. Gardens, roadsides and arable fields.

A common garden plant, rarely found naturalised in the wild. Since 1986 it has grown by the path to the Hermitage caves at Bridgnorth (Trueman, 1986 – J. Clayfield, 2007) where it has become quite abundant. There are also records for it along a lane at Hungerford (Clayfield, 2002) and in the corner of an arable field at Greenfields (B.J. Laney, 2010).

### *Silene flos-cuculi* (L.) Clairv.

#### Ragged Robin

Native. Widespread. Stable. Grassland, mires, swamps and fen.

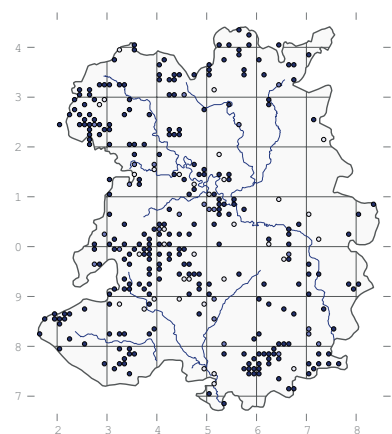
First record (as *Lychnis flos cuculi*): Williams, c. 1800, 'moist meads and bogs, common'.

Widespread but rarely abundant in a variety of damp grasslands including MG8 *Caltha palustris* at Meverley Farm, Morton Pool (D.H. Wrench,

1991) and Ruewood; MG10 *Holcus lanatus* at Larkfield Farm, Diddlebury (Trueman, 1981) and Fenemere (C. Walker, 1988); in all stands of M22 *Juncus subnodulosus*; M23 *Juncus effusus* at Rhos Fiddle, the Stiperstones and elsewhere; and both M24 *Cirsium dissectum* and M27 *Filipendula ulmaria* at Black Coppice.

In other wetlands, it is recorded in OV30 *Bidens tripartita* on the margin of Marton Pool, Chirbury (M.J. Wigginton, 1979); S3 *Carex paniculata* at Fenemere (Walker, 1988); S12 *Typha latifolia* at Shelve Pool (Trueman, 1981); S14 *Sparganium erectum* at Betton Pool (Wigginton, 1979); S17 *Carex pseudocyperus* at Oxon Pool; S24 *Calamagrostis canescens* at Fenemere; and S27 *Comarum palustre* at Bomere and Shomere pools (the last three by Wigginton, 1979).

At Oxon Pool it also extends into the W5 *Alnus glutinosa* woodland, but it usually only tolerates only semi-shaded conditions. Good places to look for it include Brown Moss, where it was first recorded by Sinker in 1960, and Oxon Pool, where it is exceptionally abundant. There is no direct evidence of a decline, but it is much rarer now than Williams and Leighton considered it to be.



### *Silene baccifera* (L.) Roth

#### Berry Catchfly

Neophyte. Rare. Casual. Gardens.

Recorded only by R.D. Benson in 1904 at Pulverbatch (*Record of Bare Facts* 14, 1905).

### *Silene dichotoma* Ehrh.

#### Forked Catchfly

'Waste ground, Buildwas; not uncommon there for some period, especially during 1908–10' (W.B. Allen, G. Potts & J.C. Melvill, *Record of Bare Facts* 33, 1924).

## *Saponaria officinalis* L.

### Soapwort

Archaeophyte. Scattered. Decreasing. Roadsides, river banks, waste ground.

First record: R. Waring, c. 1770, 'by the roadside between Llanamonerch and the new bridge, Salop.'

A garden escape, occasionally becoming naturalised and spreading, especially on river banks. There are recent records for a road verge by restored mining spoil heaps in Snailbeach (R. Knowles, 1999), Llanyblodwel (A.K. Thorne, 2004), Rockhill (SO27Z, J. Clayfield, 2008), and the banks of the Severn in the Quarry, Shrewsbury (a double-flowered form).

## *Vaccaria hispanica* (Miller)

Rauschert

### Cowherb

Neophyte. Rare. Casual. Gardens.

First record (as *Saponaria vaccaria*): C.E. Johnson, 1905, Buildwas Station.

In a disused fowl run at Tickwood (G. Potts, 1929), in Bucknell (H.H. Shepherd, 1963), and from bird seed in a garden in Beckbury (W.E. Hutton, 1979).

## *Dianthus caryophyllus* L.

### Clove Pink

Once a widely grown garden plant, established on the walls of Haughmond Abbey (Williams, c. 1800; Leighton, 1832) and Ludlow, especially on Ludlow Castle (J. Babington, 1803 – L. Kitching, <1910, BIRM).

## *Dianthus plumarius* L.

### Pink

Like the former species, an old garden plant, naturalised on the walls of Haughmond Abbey (Leighton, 1841 – W.E. Beckwith, 1880) and Ludlow, especially Ludlow Castle (A. Bloxham, 1831 – Sinkler, 1984).

## *Dianthus deltoides* L.

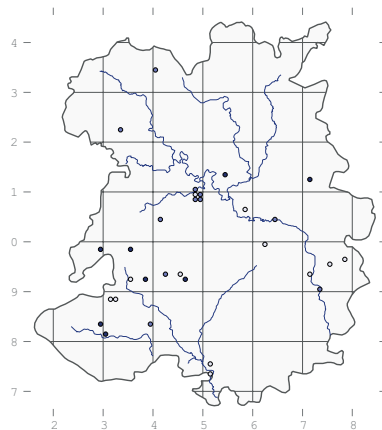
### Maiden Pink

Native. Scarce. Decreasing. Axiophyte: acid grassland.

First record: L. Brown, 1725, 'about Bishops Castle.'

In acid grassland, typically U1 *Rumex acetosella* grassland and MG5 *Festuca rubra* in places such as a road verge at Guilden Down (SO305817, 2003), where it was first recorded by H.S.T. Richardson in 1921; grassland at the

Lump, Priestweston (SO290981, J.M. Roper, 1981 – S. Leather, 2012); a verge at Pennerley (SO354988, A.K. Thorne, 2002); Bicton (SO291832, F.J. Gomersall, 2008); and Granville Country Park (SJ718120, R.J. Mantle, 2012). It is found as high as 378 m at Pennerley (SO35489887, Whild *et al.*, 2007).



## *Dianthus barbatus* L.

### Sweet William

Neophyte. Rare. Stable. Waste ground.

First record: A.E. & K. White, 1923, Viroconium.

A widely-grown garden plant that occasionally crops up as a short-lived casual on waste ground. It has only been recorded twice in the wild: the Whites' record from the Roman ruins at Wroxeter (where it was probably a recent introduction rather than spontaneous from long-buried seed); and on a roadside adjacent to the Old River Bed in Shrewsbury by Trueman in 1995, where it did not persist.

## *Dianthus armeria* L.

### Deptford Pink

Just a few old records: 'near Ketley in gravel' (W. Withering, 1787); 'canal bank, Burford, once only' (W. Corbett, 1841); 'on the hill towards Cleobury' (M. McGhie, 1841); 'near Greete and Ashford' (A. Marston, 1870); and 'almost growing as wild' in a garden at Meole Brace (Miss Blunt, 1923).

## Amaranthaceae

## *Chenopodium bonus-henricus* L.

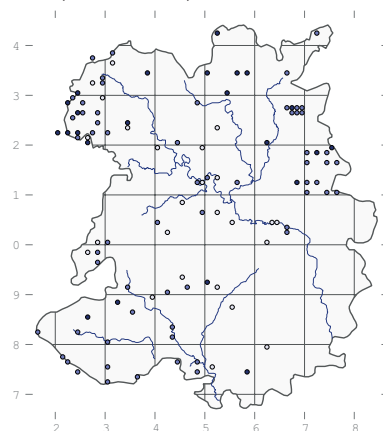
### Good King Henry

Archaeophyte. Scattered. Declining. Waste ground.

First record: Williams, c. 1800, 'rubbish, roadsides, church yards, etc.'

Once widely grown as an edible herb and frequently established on waste ground, but now rarely seen. There

are recent records for Cynynion (R.A. Dawes, 2000 and A.K. Thorne, 2006), Ellesmere Business Park (D.H. Wrench, 2007) and the farmyard at Trefonen Hall (Dawes, 2000).

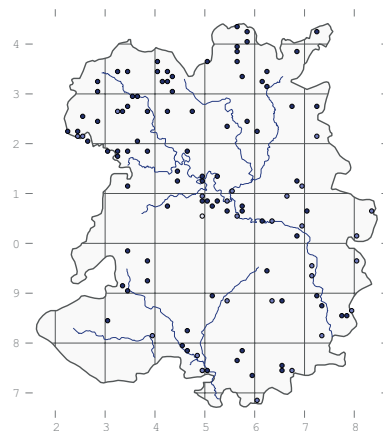


## *Chenopodium rubrum* L.

### Red Goosefoot

Native. Widespread. Increasing. Waste ground and pond margins.

First record: H.M. Auden, 1908, Condover.



An annual of bare ground, sometimes in abundance on expanses of pond substrate left bare during a hot summer. It seems remarkably independent of nutrients, growing on the sandy drawdown zone around mesotrophic lakes in OV30 *Bidens tripartita* at Brown Moss and Newton Mere and in OV32 *Ranunculus sceleratus* at Crose Mere, or on mounds of composting horse manure or cattle dung in farmyards. In the 1990s it was occasional along the margins of the Montgomery Canal, and sometimes it is recorded on mud by rivers (e.g. by the Clun at Aston in 1983) but it is usually found by still water. It has been known to occur in urban flowerbeds, such as in Castlefields, Shrewsbury in 2009 (S. Smart). The best place to see it is at Brown Moss in any dry summer; it was first recorded there in 1992 by Trueman and it now occurs every year if the water level drops. The lack of early records cannot be simply due to taxonomic



uncertainty; it has increased rapidly since the middle of the 20<sup>th</sup> century. An early record by G.H. Griffiths (c. 1870), 'occasionally, waste and cultivated ground' in the Church Stretton district, is probably an error. It is a lowland plant, recorded up to about 200 m at Cleestanton (P.R. Green, 2009).

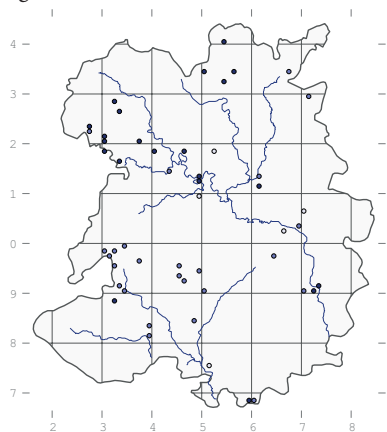
***Chenopodium polyspermum* L.**

**Many-seeded Goosefoot**

Archaeophyte. Scattered. Stable. Arable fields and waste ground.

First record: Williams, c. 1800, 'rubbish and gardens.'

Most records are from farmland such as a field of maize at Maesbrook in 2003 (A.K. Thorne, BIRM), but it is has also been found on the verge of the recently constructed Nesscliffe Bypass in 2003, on gravel by the River Teme at Tenbury Wells in 2005, and in gardens in Shrewsbury. Leighton (1841) found it in abundance in a pit near Sharpstones Hill and considered it a plant of dried-out pools, but that doesn't seem to be its typical habitat. Most of the records in Sinker's (1985) Flora were from the hills, but nearly all records since then are from the agricultural lowlands.



***Chenopodium hybridum* L.**

**Maple-leaved Goosefoot**

Archaeophyte. Rare. Casual. Waste ground.

On waste ground in Shrewsbury (Leighton, 1840; T. Butler, 1878; T.P. Blunt, 1899) and at Lindridge Farm (W.A. Thompson, 1980).

***Chenopodium urbicum* L.**

**Upright Goosefoot**

Archaeophyte. Rare. Casual. Waste ground.

Just a few records ever: 'dunghills, not uncommon' (Williams, c. 1800);

Hadnall (E. Elsmere, 1841); 'rubbish heap, Burford Road, Tenbury' (C. Bailey, 1892, MANCH); Shrewsbury (M.J. Lee, c. 1937).

***Chenopodium murale* L.**

**Nettle-leaved Goosefoot**

'Dunghills and rubbish as you enter the Abbey Foregate, Shrewsbury' (Williams, c. 1800).

***Chenopodium ficifolium***

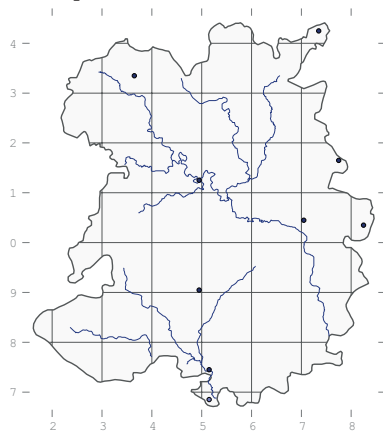
Sm.

**Fig-leaved Goosefoot**

Archaeophyte. Scattered. Increasing. Waste ground and roadsides.

First record: Williams, c. 1800, 'dunghills and amongst potatoes, common.'

A rare annual of road verges at Woore (J.H. Clarke & A.R. Franks, 1995), Stockton (R.M. Stokes, 1996) and Ludlow (R.F. Shoubridge, BIRM) and on waste ground at Greyfriars, Shrewsbury (Stokes, 2000 – K.K. Bell, 2009). In 2003 G.D. Kitchener recorded it gardens and adjoining farmland at Eaton Manor Farm. Although Williams considered it to be common two centuries ago, it was not recorded again in the county until 1975, when M.M. Webster collected it in a disused railway yard at Woofferton (det. J.P.M. Brenan, K). Whether it was simply overlooked in the interim, or really did have a period of decline, is not known.



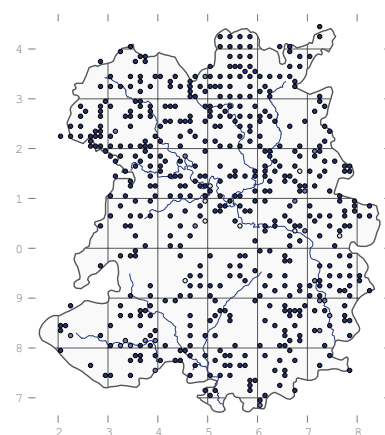
***Chenopodium album* L.**

**Fat-hen**

Native. Widespread. Stable. Roadsides, arable fields, gardens.

First record: Williams, c. 1800, 'turnip fields, gardens, dunghills, etc.'

On bare soil, in assemblages such as OV13 *Capsella bursa-pastoris* weed community in an arable field margin at Upton Cressett; OV14 *Urtica urens* and OV18 *Polygonum aviculare* in an arable field at Edgmond (both Trueman, 1981).



***Atriplex hortensis* L.**

**Garden Orache**

Neophyte. Rare.

A garden escape at Westonwharf (Parker, 1999) and Ruyton-XI-Towns, where it occurs in the churchyard and has spread to the fields below.



*Chenopodium rubrum* at Berrington



*Claytonia sibirica* at Wenlock Edge

### *Atriplex prostrata* Boucher ex DC.

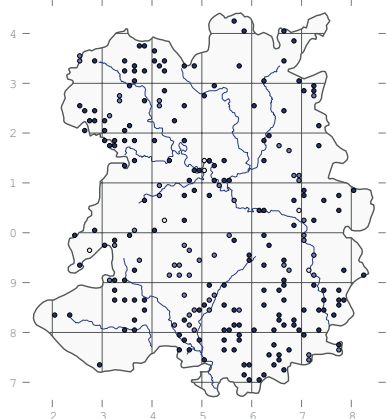
#### Spear-leaved Orache

Native. Widespread. Increasing. Roadsides, arable fields and pool margins.

First record: Leighton (as *A. deltoidea* Bab.), 1841, Old Heath, Shrewsbury.

Although it occurs in a wide variety of ruderal habitats, this species is most at home on roadsides, where it often grows on the very edge of the tarmac, especially in the salt-spray zone of trunk roads. It seems to have become much more widespread in the county in recent decades. Leighton (1841) only listed the one locality for it and Sinker (1985) considered it to be a plant of the south-east of the county. It is now as common throughout, mostly on roadsides but also on river and canal banks, in arable fields and on waste ground and rubble. It has been recorded in MG13 *Alopecurus geniculatus* and OV28 *Agrostis stolonifera* grassland at Edgerley (A.K. Thorne, 2001). On pond margins it is characteristic of eutrophic OV30 *Bidens tripartita* (e.g. by the River Severn at the English Bridge, Shrewsbury) but also grows in mesotrophic OV35 *Lythrum portula* vegetation on the margins of Newton Mere.

It is sometimes found in the complete absence of any other vegetation, even on walls and in cracks in pavements, such as along the towpath of the Severn in Shrewsbury. It is often associated with transport corridors and this may be the cause of the northward expansion of its range. In northern and western parts of Britain it remains a largely coastal plant.



### *Atriplex littoralis* L.

#### Grass-leaved Orache

Native. Scattered. Increasing. Road verges.

On the verges on some of the major roads around Shrewsbury. First spotted

by B.J. Laney at on the side of the A5 at Nobold (SJ473097) in 2009.

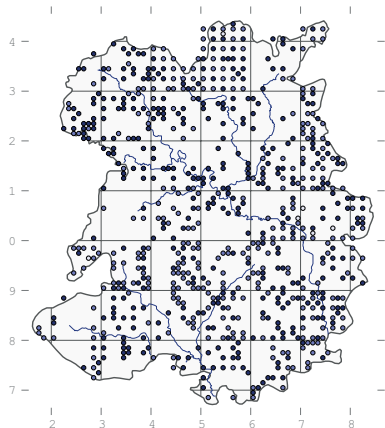
### *Atriplex patula* L.

#### Common Orache

Native. Widespread. Stable. Road verges, arable fields, waste ground.

First record: Williams, c. 1800, 'gardens, common.'

On arable field margins such as OV10 *Senecio vulgaris* community at Eudon George; on bare ground in OV30 *Bidens tripartita* in an old oxbow lake at Aber Tanat; or on mud in S14 *Sparganium erectum* swamp on the bank of the Severn at Buildwas (both Trueman, 1981).



### *Beta vulgaris* L.

#### Beet

Neophyte. Scattered.

Commonly grown on farms and in gardens, but only rarely established in the wild. The first record was by J.C. Melvill in 1919, as a crop volunteer in a cornfield at Pulley (*Record of Bare Facts* 29, 1920). The recent records are also for arable fields, as on Knockin Heath in 2005.

### *Amaranthus retroflexus* L.

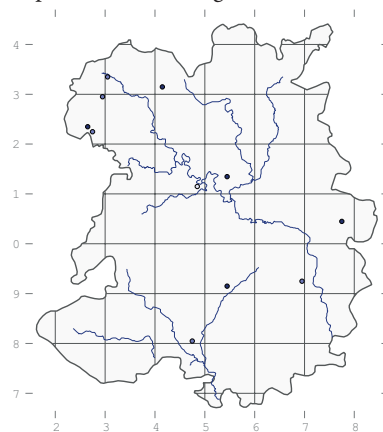
#### Common Amaranth

Neophyte. Rare. Stable. Arable fields.

First record: Leighton, 1880, Kingsland.

An uncommon weed of arable fields, mainly restricted to the south-east of Britain. The first record was when it appeared on a heap of spoil from the excavations of Shrewsbury School in Kingsland in 1880. It was not recorded again until 1976, when H. Hand found it in a garden at Vernold's Common. Several of the records in Sinker's Flora were from gardens, and they considered it a birdseed alien, but others were from roadsides and arable fields. The more recent records are all from arable situations. There is nowhere where it has

been recorded twice, so it is impossible to predict where it might occur.



### *Amaranthus hybridus* L.

#### Green Pigweed

Casual. Rare. Increasing. Waste ground.

First record: R.M. Stokes, 1994, Shrewsbury.

This is a South American annual that sometimes occurs in bird seed. It was recorded by R.M. Stokes on the towpath of the Severn in Shrewsbury near Greyfriars Bridge, where people often feed the ducks. There is also a record for North Shropshire (SJ53U, 2004) by A.K. Thorne.

## Phytolaccaceae

### *Phytolacca acinosa* Roxb.

#### Indian Pokeweed

Neophyte. Rare. Increasing. Roadsides.

On a roadside near Kingsland Bridge, SJ488120, where it was first recorded by R.M. Stokes in 1994 and is still present. It also grows in the allotments below Town Walls, which may be where the naturalised plants originated.

## Montiaceae

### *Claytonia perfoliata* Donn ex Willd.

#### Spring Beauty

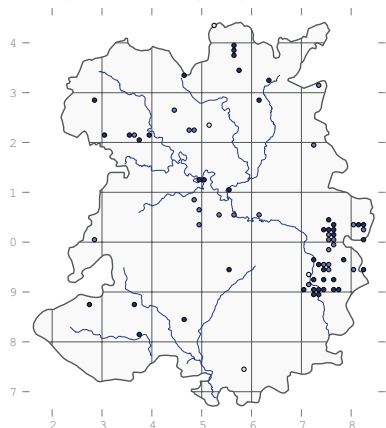
Neophyte. Scattered. Stable. Woods and hedges.

First record: F.J. Rooke, 1867, near Shifnal (CGE).

First established at Ryton, near Shifnal (Beckwith, 1880), where it is still abundant along the green lane running north from the village. It was subsequently recorded on a wall in Bridgnorth (W.B. Allen, 1883), on the carriage drive at Grinshill (Miss Kilvert, 1894), and by the Grindley Brook near Whitchurch (E.B. Benson, 1901). It



is now widespread in the lowlands. A good place to see it is Attingham Park, where it was first recorded by E.M. Rutter under the stand of *Cedrus libani* in 1955. It occurs mainly in hedges, wooded stream sides and the edges of W8 *Fraxinus excelsior* woodland. Best seen in May and early June, as it has usually died down by July.



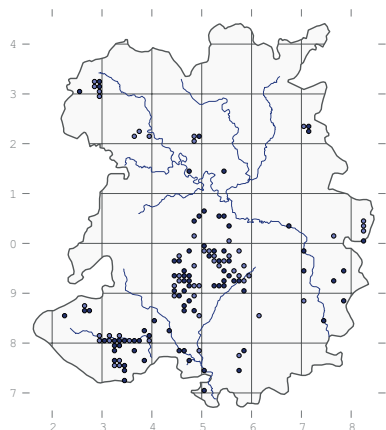
### *Claytonia sibirica* L.

#### Pink Purslane

Neophyte. Scattered. Stable. Woods and hedges.

First record: W.E. Thompson, 1897, 'growing plentifully in a small swamp by a brook in Lord Boyne's grounds at Burwarton'

Not recorded anywhere else in the county until the 1960s, when it was found by N.M. Mackenzie at Church Stretton (1961) and Glazeley (1967) and by H. Murrell at Plaish (1962). Since then it has increased greatly, spreading from the grounds of country houses and churchyards along streams, into damp woods and along road verges. Hamilton (1909) considered it only a casual, but Sinker (1985) described it as naturalised. It can now be found far from habitation and, although it is sometimes very abundant, it is rarely considered a threat. It flourishes in damp W8 *Fraxinus excelsior* and W10 *Quercus robur* woodland. A good place to see it is Clunton Coppice, where it has been established since 1977 (I. Bolt).



### *Montia fontana* L.

#### Blinks

Native. Local. Stable. Axiphyte: acid grassland, upland flushes.

First record: Williams, ca. 1800, 'moist heaths – not uncommon – on Aberly wood, Haghmon hill etc.'

Typical of seasonally wet hollows in grassland or on the edges of flushes in the uplands; sometimes in dry grassland where rainwater and dew are the only sources of moisture.

It is recorded in M6 *Carex echinata* and M23 *Juncus effusus* at Upper Darnford (both R. Tapper, 1983); M35 *Montia fontana* at Boiling Well (Trueman, 1980) Lightspout Hollow (Tapper 1983) and Caer Caradoc (R. Meade, 2010); OV30 *Bidens tripartita* at White Mere (M.J. Wigginton, 1979); OV32 *Ranunculus sceleratus* at White Mere; S9 *Carex rostrata* at Wildmoor Pool (Trueman, 1981); and U1 *Rumex acetosella* at Lyth Hill, Stapeley Hill and Titterstone Clee (Trueman, 1981).

Three subspecies have been recorded: ssp. *variabilis* Walters was collected 'in boggy ground by the Wolf's Head turnpike gate' by Leighton (det. S.M. Walters, CGE, E) and it has also been recorded in several places on the Long Mynd as well as Bomere Pool (E.M. Rutter, 1956) and Brown Moss (Perring, 1962); ssp. *amporitana* Sennen was also in Leighton's collection at Wolf's Head, and has been recorded at Bomere Pool (Leighton, 1835), Middletown Hill (R.A.H. Graham, 1948), Titterstone Clee (J.G. Dony, 1955), Black Mountain (Perring, 1977) and Llyn Rhuddwyn (Perring, 1989). The only recent record is on Titterstone Clee (D.H. Wrench, BIRM). The third one, ssp. *chondrosperma* (Fenzl) Walters, is a plant of U1 grassland. It has been recorded many times, first by Leighton on Bayston Hill in 1832 (det. S.M. Walters, CGE) and subsequently on most of the hills, especially those composed of Longmyndian shales.

## Cornaceae

### *Cornus sanguinea* L.

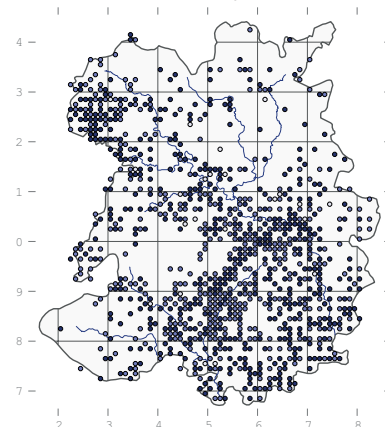
#### Dogwood

Native. Local. Stable. Woodland and hedges.

First record: Williams, c. 1800, 'woods and hedges.'

In hedges and woodland margins on base-rich soils, mostly in W8 *Fraxinus excelsior* woodland and equivalent

hedges in places like Craig Sychtyn, Limekiln Wood and Stevenshill. Sometimes it extends out from hedges in MG1 *Arrhenatherum elatius* grassland, as along a farm track at Lanegreen, or colonises abandoned quarries like Blackbridge and Lilleshall.



### *Cornus sericea* L.

#### Red-osier Dogwood

Neophyte. Scattered. Increasing. Gardens, woods, municipal plantings.

First record: Perring, 1962, SJ43.

Widely planted in shrubberies in places like the Millennium Green at Moreton Say or as a shrub layer in woods such as at Shavington Park. Only very occasionally established in places where it is not deliberately planted, as on the railway embankment at Shifnal (R.M. Stokes, 1996), where it may have come from dumped garden waste.

### *Cornus alba* L.

#### White Dogwood

Planted at Attingham Park (Perring, 1970 and M.S. Duffell, 2005) and on the bank of the Severn in Ironbridge (R.M. Stokes, 1998).

## Hydrangeaceae

### *Philadelphus coronarius* L.

#### Mock Orange

Neophyte. Scattered. Casual. Gardens.

First record: Perring, 1969, Attingham Park.

Planted in gardens and landscaped parks in places like Cound Hall, the Mere at Ellesmere, and by the Llangollen Canal at Adderley. Naturalised at Craig-Ilwyn Quarry, possibly from garden waste.



## Balsaminaceae

*Impatiens noli-tangere* L.

## Touch-me-not Balsam

Native. Rare. Declining. Axioophyte: wet woodland.

First record: G. Bowles, 1632, Marrington Dingle.

Still present at Marrington Dingle, albeit rare, with a population in a typical year of about 200 plants but, as it is an annual, this can fluctuate considerably. From the records it seems that it grows in W6 *Salix* × *fragilis* woodland and possibly along streams in W8 *Fraxinus excelsior* woods. It also grows along two small dingles by the River Unk at Mainstone, although we have no record of it there since 1986 (J. Roper). These two populations are considered to be native, despite the absence from these sites of its monophagous predator, the Netted Carpet Moth, *Eustroma reticulata* (P.E. Hatcher, 1991). R.M. Serjeantson considered it to be native in woods around Acton Burnell in 1881, but it has not been recorded there again. Whether it is really a British native or not remains an open question, but it has a wide circumboreal distribution, and it seems possible.

At Badger Dingle it was first recorded by J.C. Melvill in 1913, but O.M. Feilden later reported that Col. Francis

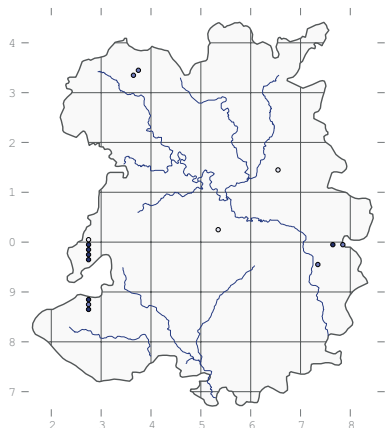


*Lysimachia nemorum* (Dan Wrench)



*Anagallis tenella*

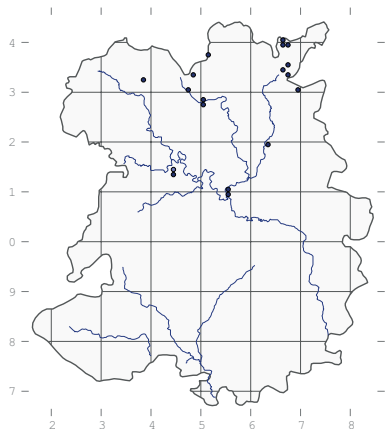
Capel-Cure had planted it there. It was still present there in 2006 (S. & E. O'Donnell). At a few other sites around the county there have been individual sightings of what were probably garden escapes.

*Impatiens capensis* Meerb.

## Orange Balsam

Neophyte. Local. Increasing. Riverbanks and canals.

First record: P. Parker, 1984, Calcott Moss.



In common with the other *Impatiens* species, this is an annual that grows on riverbanks. It was first recorded in Britain in Surrey in 1822, and it has spread steadily north-west across the country since then but, curiously, in a direct line, not spreading out to the east or west. It had reached Shropshire by 1984, when it was found in a farm pond at Calcott by P. Parker, and later it spread onto Calcott Moss, where it still occurs. But that may have been an isolated introduction, because it is not a typical habitat. In 1988 F.H. Perring found it by the River Tern at Market Drayton, and since then it has been found in several places along the Tern and the Roden, and also along the Shropshire Union Canal near Market Drayton. By the Roden at Tilley it grows in OV32 *Ranunculus sceleratus* in a fenced-off cattle berm. The best place to see it is at Attingham Park, where it grows in profusion in W6

*Salix* × *fragilis* between the R. Tern and the stream that runs down from Berwick Wharf; but the canal at Woodseaves and Walkmills Marsh nature reserve near Market Drayton are also good sites.

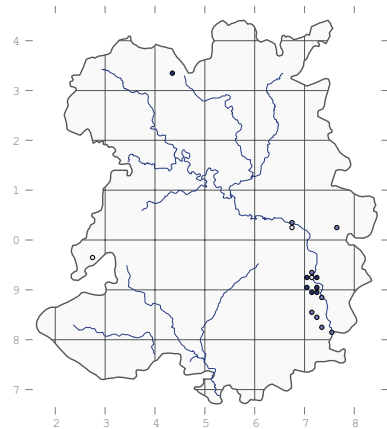
*Impatiens parviflora* DC.

## Small Balsam

Neophyte. Scarce. Stable. Woods and river banks.

First record: W.H. Painter, 1894, Bridgnorth Castle.

Naturalised along wooded rivers in the Bridgnorth area, apparently stable but not spreading out from there. There are a few records from as far north as Ironbridge, but no repeat records, suggesting that it was just a casual there. Elsewhere in Britain it has spread steadily, so possibly it will expand outwards from the lower Severn valley eventually. A record for Lyneal Wharf was by K.K. Bell (2007).

*Impatiens glandulifera*

## Royle

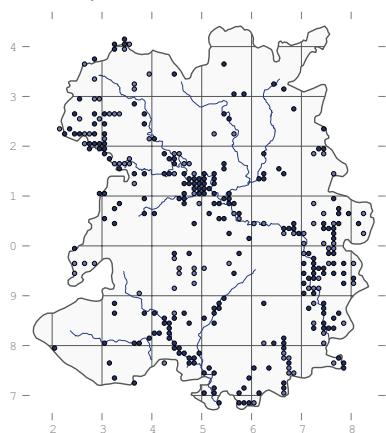
## Indian Balsam

Neophyte. Local. Increasing. River sides.

First record: H.S. Marsh, 1910, River Dee at Coed yr Allt.

A successful competitor on river banks, especially where dredging has taken place. This typically involves felling the riverbank trees to allow access for diggers, and then spreading the fertile silt on the bare ground adjacent to the river. Under such circumstances *I. glandulifera* can become overwhelmingly abundant, but it is never so vigorous in shady conditions or where management such as grazing or mowing takes place. Local authorities and the Environment Agency sometimes clear it out from such places, typically leaving stands of *Urtica dioica* to grow in its place. It is now frequent along most of the larger

rivers of the county and along some of the smaller tributaries and drainage ditches. It is present, but rare, along some of the canals (first recorded on the Montgomery Canal at Queen's Head by I.R. Bonner in 1968) and by some of the meres and mosses (e.g. Lyneal Moss) where it does not always persist. On the banks of eutrophic rivers such as the Severn in Shrewsbury it occurs in OV24 *Urtica dioica*, W6b *Salix* × *fragilis* and W6d *Sambucus nigra* woodland, whereas in the old Shrewsbury Canal at Wappenshall it grows in S26 *Phragmites australis*-*Urtica dioica* fen. It is a lowland plant, being recorded up to about 220 m at Pentre, Clun.



## Polemoniaceae

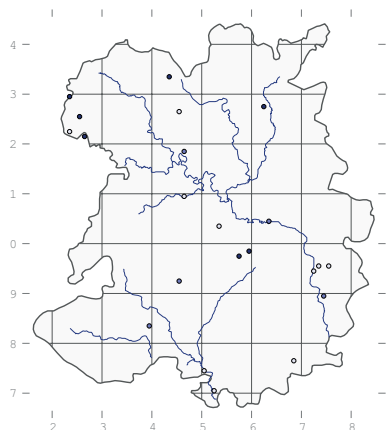
### *Polemonium caeruleum* L.

#### Jacob's-ladder

Native Scattered. Stable. Gardens, roadsides, river banks.

First record: Williams, c. 1800, 'in a ditch bank on the right hand side of the turnpike road between the Golden Heart Alehouse and Burlton.'

Scattered on roadsides, usually near houses, and sometimes naturalised on waste ground. There are recent records for a roadside at Hodnet Heath (Trueman, 1991), a wild garden at Pant (H. Webster, 1992), Lilleshall Quarry (R.M. Stokes, 1994), in woods at Cole Mere, and in Treflach Quarry (A.K. Thorne, 2006).



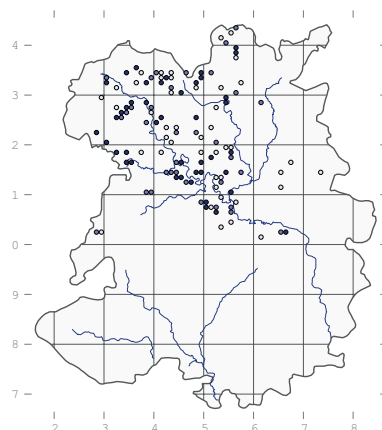
## Primulaceae

### *Hottonia palustris* L.

#### Water-violet

Native. Local. Decreasing. Axiophyte: ponds, canals and wet woods.

First record: Williams, c. 1800, 'pits, ponds and ditches, common.'



Sometimes abundant on exposed, bare sedge peat in shallow pools and wet woodland. At Brown Moss it is usually quite rare in several of the pools, but it can become abundant when the pools scrub over and the water level drops. This is typically W1 *Salix cinerea* woodland, its most characteristic habitat, which also occurs in the lagg around mosses where there is some surface water runoff. *Hottonia palustris* does not persist if the substrate continues to dry out or the shade becomes too dense, but it is one of the first plants to recover if the trees are killed by flooding or cut down for conservation management. It has also been recorded in a succession of habitats at Brown Moss, from A2b *Lemna trisulca* pools through OV30 *Bidens tripartita* shoreline vegetation, S12d *Typha latifolia* swamp, to S27 *Comarum palustre*. At Brownheath Moss and White Mere it grows in W5 *Alnus glutinosa* woodland. It is very persistent in some sites, although it can disappear for a while. It has been known at Brown Moss since 1849 (H. Sandford), at Copthorne Mere since 1892 (Beckwith) and at Haughmond Hill since 1865 (W. Whitwell). Although it seems to have gone from Bomere Pool and Hencott Pool in recent years, the habitat is potentially suitable and it is likely to reappear if the trees are cleared. Colonisation of new sites has not compensated for all the losses, however, even with a bit of help: at Benthall Hall it was introduced to a pool in the 1920s by G. Potts and it is still thriving there (A.K. Thorne, 2009). This may also have been the source of the plants in the Broad Ditch

at Posenhall (E.M. Rutter, 1960). It has been recorded in canals since the late 19<sup>th</sup> century (Beckwith), and it was once widespread in the Montgomery Canal (first found by L.H. Heywood, 1953) and Prees Branch, but it is currently confined to the Aston Locks reserve.

### *Primula vulgaris* Hudson

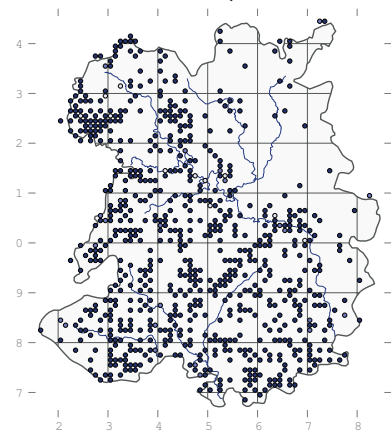
#### Primrose

Native. Widespread. Stable. Woods, hedges, field edges.

First record: Williams, c. 1800, 'woods, hedges.'

Characteristic of W8 *Fraxinus excelsior* woodland in places like Bushmoor Coppice, Llynclys Hill and Wenlock Edge, where it grows in partial shade in clearings, along rides, on steep banks and on river banks. It is also widespread under W8 hedges and in adjacent MG1 *Arrhenatherum elatius* grassland in places like Brandwood.

It is also recorded in MG5 *Festuca rubra* on Llynclys Hill; MG8 *Caltha palustris* and M22 *Juncus subnodulosus* at Crofts Mill (both C. Walker, 1994); W7 *Lysimachia nemorum* at Fastings Coppice. It is commonest on calcareous soils and rare in the arable areas in the north-east of the county. A good place to look for it is at Benthall Edge Wood, where it is most abundant in Pattens Rock Quarry.



### *Primula* × *polyantha* Miller (*vulgaris* × *veris*)

#### False Oxlip

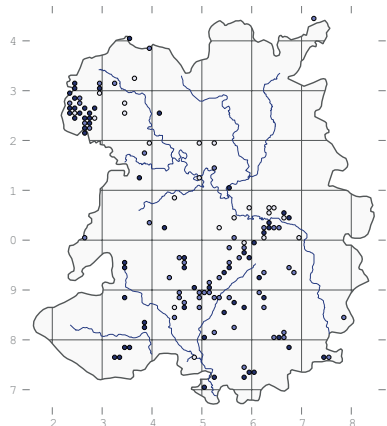
Native. Local. Stable. Woodland, grassland and gardens.

First record (as *P. veris* var. *elatior*): W. Withering, 1787, 'high pastures near Little Wenlock.'

A natural wild hybrid, but also a common garden plant (when it is known as polyanthus) which is cultivated in a variety of colours and forms. It occurs mainly in woods in

## Vascular plants

the limestone districts, where it tends to grow on rides, roadsides and on woodland edges. In most places it grows in W8 *Fraxinus excelsior* woods, as at Craig Sychtyn (R.A. Dawes, 2000), Blakeway Coppice or the Novers, but in quarries in particular it is likely to be found in limestone grassland, as in Dolgoch Quarry.

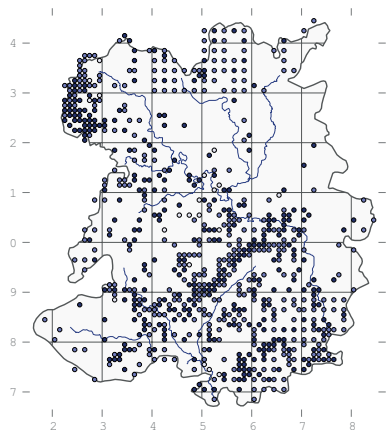


### *Primula veris* L.

#### Cowslip

Native. Local. Decreasing. Grassland.

First record: Williams, c. 1800, 'pastures, common.'



Abundant in all good stands of MG5 *Festuca rubra* grassland in meadows and on roadsides throughout, often persisting in more rank swards of MG1 *Arrhenatherum elatius* in places like Blackfriars field in Shrewsbury or spreading into wetter MG8 *Caltha palustris* at Morton Pool and M22 *Juncus subnodulosus* fen-meadow at Morton Pool and Porth-y-waen (both Trueman, 1981). Also occasional in calcareous grasslands such as CG2 *Avenula pubescens* at Craig Sychtyn and CG3 *Bromopsis erecta* at Hilltop, Lea Quarry and Stretton Westwood (D.H. Wrench, 1995). It does not persist in woodland but it does occur in open scrub at Blodwel Rock and a quarry near Stokes's Barn (both Trueman, 1981), and there is one rather atypical record of it in OV21

*Plantago major* in a garden in Pant (Trueman, 1981), where seeds might have been scattered. Although it is sometimes introduced, it is clearly still declining in many parts of the county as a result of continuing agricultural intensification.

### *Primula florindae* Kingdon-Ward

#### Tibetan Cowslip

One plant, established on the bank of the Cound Brook near Berrington (SJ510071) in 1971 (C.A. Sinker, K).

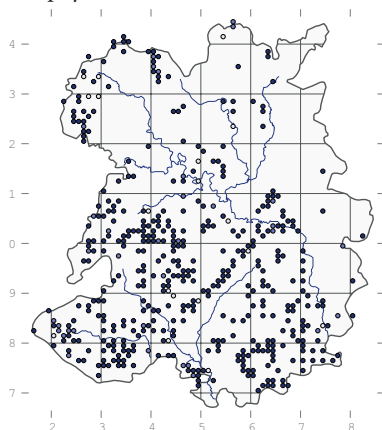
### *Lysimachia nemorum* L.

#### Yellow Pimpernel

Native. Widespread. Stable. Woodland and grassland.

First record: Williams, c. 1800, 'woods, not uncommon.'

A plant of damp woods, mostly on the hills in the southern half of the county. It is not limited by altitude, growing as high as suitable habitats will allow. In the lowlands it has been recorded in W5 and W6 *Salix × fragilis* woods on peaty soils around several of the meres (Cole Mere, Oss Mere, the Mere at Ellesmere) and higher up on Haughmond Hill; also in W7 *Lysimachia nemorum* as high as Upper Vessons on the Stipertones. It is also common in W8 *Fraxinus excelsior* woods at intermediate altitudes. It is also frequent in some damp grasslands such as MG10 *Holcus lanatus* grassland at Hope Coppice, MG5 *Festuca rubra* grassland at Walkmills (D.H. Wrench, 1994) and W4 *Festuca ovina* grassland at Ditton Mill (Wrench, 1994). Sometimes it occurs in taller vegetation such as OV26 *Epilobium hirsutum* tall-herb at Berrington Pool (M.J. Wigginton, 1979). Sinker (1985) treated it as an 'A' species, being too common to map, but it turns out to be fairly well restricted to the hills and the meres, and is not far off being an axiophyte.



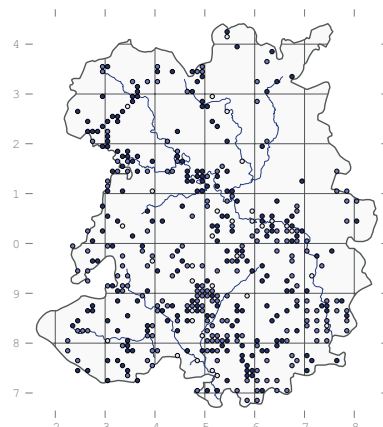
### *Lysimachia nummularia* L.

#### Creeping-Jenny

Native. Widespread. Increasing. Grassland and woodland rides.

First record: E. Lhwyd, 1681, Melverley, 'in ye ditches before you passe over Severn.'

In damp grassland in places like Ruewood Pastures, where it grows in MG8 *Cynosurus cristatus*, MG10 *Holcus lanatus* and M23 *Juncus effusus* rush-pasture. It is sometimes found in woods, along damp rides and in clearings where there are higher light levels. At The Moors, Ellesmere, it occurs in W6 *Salix × fragilis* woodland. Sometimes planted in gardens and churchyards, from where it can spread along roadside verges. Although superficially its habitat is somewhat similar to that of *L. nemorum*, it is a lowland plant, being found mostly in the river floodplains and along canal sides.



### *Lysimachia vulgaris* L.

#### Yellow Loosestrife

Native. Local. Stable. Axiophyte: rivers, swamps, wet woodland.

First record: Williams, c. 1800, 'bogs & ditches, not uncommon – bog between the Cloud Coppice and the Gouter, plentifully.'

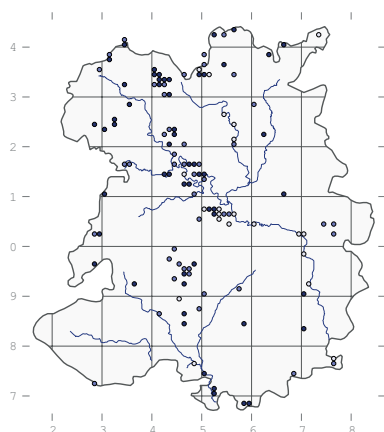
In wetland habitats, almost exclusively on peaty soils by lowland rivers and around the meres. It is sometimes abundant in swamps in full sunlight, but it remains frequent but less abundant in dense woodland. Perhaps its best site is Berrington Pool, where it has been recorded in S12 *Typha latifolia*, S14 *Sparganium erectum* and S27 *Comarum palustre* swamps, M27 *Filipendula ulmaria*; A10 *Persicaria amphibia* community in standing water; and W1 *Salix cinerea* carr.

Other vegetation communities it has been recorded in include S24 *Calamagrostis canescens* at Fenemere and S26 *Phragmites australis* at Marton



Pool, Chirbury (M.J. Wigginton, 1979). It is most characteristic of W5b *Alnus glutinosa* woodland around many meres, and it has been recorded in W6 *Salix* × *fragilis* at Cole Mere (Trueman, 1981), Morton Pool and elsewhere.

With a strong affinity for peatlands, it is a useful indicator of species-rich wetlands. It also occurs very sparsely on canal banks, often close to former peatlands, such as by the Llangollen Canal at Cole Mere (K.K. Bell, 2009), the Montgomery at Aston Locks (R.V. Lansdown, 1998) and Keeper's Bridge (A.P. Dawes, 2010), the Prees Branch Canal, and the Shropshire Union Canal at Hawksmoor (R.A. Dawes, 2010). It is occasional along the Rivers Teme and Dee, rare by the Severn and formerly (but not recently) along the Roden (Beckwith, 1892). Despite the undoubted drainage of many wetlands, there is no evidence of any change in its distribution in recent decades.



***Lysimachia ciliata* L.**  
**Fringed Loosestrife**

There is apparently a specimen in OXF from SJ50, collected by A. Williamson in 1926.

***Lysimachia punctata* L.**  
**Dotted Loosestrife**

Neophyte. Scattered. Increasing. Roadsides, river banks and gardens.

First record: B.R. Fowler, 1976, 'roadside verge at Boningale.'

Increasingly widespread as a garden escape on roadsides, waste ground and river banks, where it spreads vegetatively to form sizeable patches; but not really established in the wild. Good places to see it include Whitcliffe Common and in the car park on Haughmond Hill.

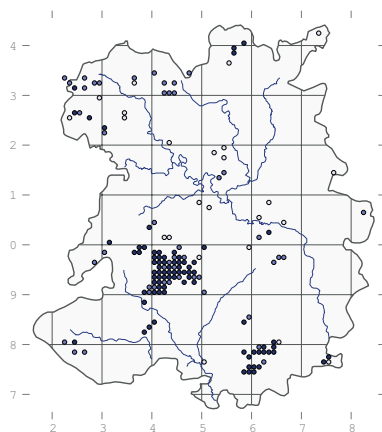
***Anagallis tenella* (L.) L.**

**Bog Pimpernel**

Native. Local. Decreasing. Axiophyte: flushes, wet heath and pool margins.

First record: Williams, c. 1800, 'on Aberly Wood, Haghmon Hill and other moist heaths, common.'

In base-rich flushes such as M6 *Carex echinata* at Colliersford Gutter (R. Tapper, 1983); M10 *C. dioica* on Hope Bowdler (P. Eades, 2010), Shirlett Gutter (Trueman, 1980), Titterstone Clee (A.K. Thorne, 1999) and Trefonen Marshes; M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010) and Trefonen Marshes; M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* in various places on the Long Mynd (Tapper, 1983); M29 *Potamogeton polygonifolius* in Callow Hollow (Tapper, 1983); and M35 *Montia fontana* on Caer Caradoc (R. Meade, 2010). It still occurs at Brown Moss, where it grows in OV31 *Rorippa palustris* and OV35 *Lythrum portula* vegetation on the margins of Pool 6, but it has gone from many other lowland sites.



***Anagallis arvensis* L.**

**Scarlet Pimpernel**

Native. Widespread. Stable. Arable fields, waste ground.

First record: Williams, c. 1800, 'pastures and gardens, common.'

On ploughed or bare soil, most typically in OV15 *A. arvensis* community in arable fields, as at Filletts Farm; or in OV10 *Senecio vulgaris* in arable fields at Lower Faintree and Welshampton (Trueman, 1981); and it has been recorded in both U1 *Rumex acetosella* and OV24 *Urtica dioica* on Abbot's Castle Hill (Trueman, 2005). It is also occasionally found in quarries, on roadsides, and in pavements or gardens in urban areas.

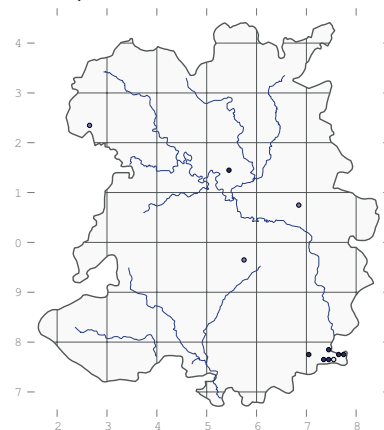
***Centunculus minimus* L.**

**Chaffweed**

Native. Rare. Stable. Axiophyte: heathland & woodland.

First record: R.M. Serjeantson, 1882, Wyre Forest.

On bare, damp, sandy ground on heaths and woodland rides. Although it was discovered in the Wyre Forest in 1882 it was not recorded there again until John Bingham refound it in 1991. It has now been seen in about ten distinct places on the Shropshire side. Also on Haughmond Hill (A.M. Stirling, 1958 and Whild, 2006), in M23 *Juncus effusus* flushes along a forestry ride.



***Cyclamen hederifolium***

Aiton

**Sowbread**

Neophyte. Scattered. Increasing. Gardens, churchyards and roadsides.

First record: Mrs A. Watkins, 1964, 'Longden Common, a certain escape from gardens' (*Transactions* 1968).

A garden escape, occasionally recorded as established in places like a farm track at Hope Bagot (I.P. Green, 2009), a road verge on Tinker's Hill, and along a lane in Little Ensdon (M. Hoare, 2010).

***Cyclamen coum* Mill.**

**Eastern Sowbread**

Neophyte. Rare.

On road verges in Bowling Green (R.M. Stokes, 2006) and Little Ensdon (M. Hoare, 2010).

***Cyclamen repandum* Sibth. & Smith**

**Spring Sowbread**

Neophyte. Rare.

'Naturalised in Lydham churchyard' (S. Kingsbury, 1996).

### *Samolus valerandi* L.

#### Brookweed

Native. Scarce. Stable. Axiophyte: ditches and marshy grassland.

First record: T. Salwey, 1841, Trefonen.

Occurs as small, transient populations in open ditches and wet grassland. There are recent records for Bromfield Quarry (D.H. Wrench, 2011), Bromley Fen (P. Parker, 1983-86), Crudgington Moor (J.D. Box, 1990 – J. Rapson, 1992), and a damp field of set-aside at Kinsall (A.K. Thorne, 2001-02). There are older records for several meres: the Mere (O.M. Feilden, 1920), Crose Mere (Sinkler, 1961-68) and 'between Aqualate Mere and Newport, in great plenty' (G.C. Druce, 1925); and for what are probably two canal sites: Welsh Frankton (Feilden, 1891) and by the Weston Branch Canal at Westonwharf (W.E. Beckwith, 1892).

## Sarraceniaceae

### *Sarracenia purpurea* L.

#### Pitcher Plant

Neophyte. Rare.

Established in two remote places on Whixall Moss (E. O'Donnell, 2002 and D.H. Wrench, 2010).

## Ericaceae

### *Arbutus unedo* L.

#### Strawberry-tree

Planted at Ketley Pitmounds (P.S. Gateley, 2003).

[*Arctostaphylos uva-ursi* (L.) Sprengel, Bearberry

'Devil's Arm-chair, Stiperstones hill,' E. Lees, 1841.]

### *Empetrum nigrum* L.

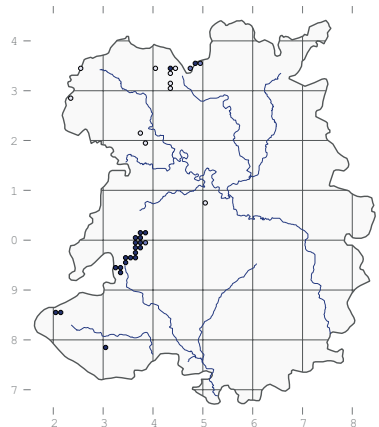
#### Crowberry

Native. Local. Decreasing. Axiophyte: bogs and moorland.

First record: R.H. Waring, 1770, Selattyn Hill.

Abundant on some of the hills, where it occurs in H9 *Deschampsia flexuosa* on the Stiperstones; extending into M6 *Carex echinata* (Trueman, 1981); and H12 *Vaccinium myrtillus* at Rhos Fiddle. It is much less abundant and declining in the lowlands. At Clarepool Moss it grows in M2 *Sphagnum fallax* lawn (Trueman, 1981). It has gone from Cole Mere (W. Phillips, 1869), Llyn Rhuddwyn (T. Salwey, 1877),

Lower Hopton (W. Beacall, 1905), Lyneal Moss (J.W. Heath, 1894), a small bog west of Nesscliffe Hall (W.E. Beckwith, 1892), Shomere Pool (Leighton, 1835), Sweat Mere (Phillips, 1869), the Mere at Ellesmere (Watson 1835), Wem Moss (F. Rose, 1959 – J. Shanklin, 1964) and Whattall Moss (J.W. Heath, 1894). It still grows on Whixall Moss, where it was first recorded by E.M. Rutter in 1958, although it is rather rare.



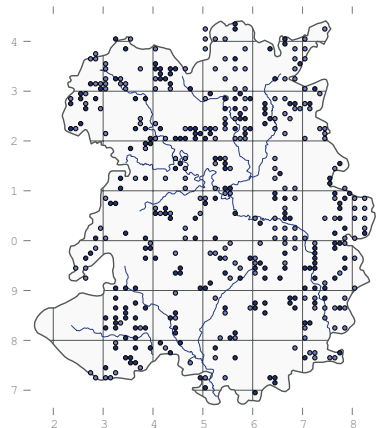
### *Rhododendron ponticum* L.

#### Rhododendron

Neophyte. Widespread. Increasing. Woods, bogs, heaths.

First record: A.D. Skelding, 1951, Oss Mere.

Planted in a variety of sites, but generally naturalised only on the more acid soils. In W4 *Betula pubescens* woodland at Shomere Pool; in W5 *Alnus glutinosa* at Cole Mere; in W6 *Salix × fragilis* at Marton Pool, Chirbury (Wigginton, 1979), Sweat Mere (Packham, 1970) and the Alders, Wollaston; and W10 *Quercus robur* at Oss Mere. It forms very dense thickets and can exclude native species.



### *Rhododendron luteum* Sweet

#### Yellow Azalea

Neophyte. Rare.

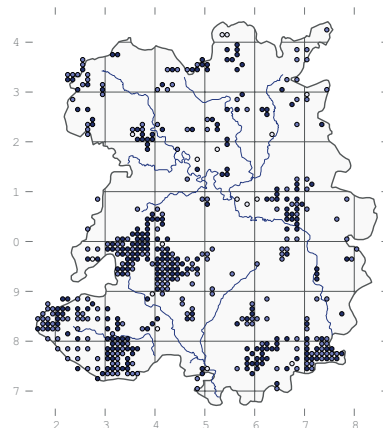
Established in Dale Coppice (SJ671047, Whild, 1996).

### *Calluna vulgaris* (L.) Hull

#### Heather

Native. Local. Declining. Axiophyte: bogs, heaths and moors.

First record: J.J. Dillenius, 1724, Knockin Heath



Abundant on the more acid soils such as peatlands and sandy heaths. On the moorlands it is found on M2 *Sphagnum fallax* mire; occasionally extending to the M4 *Carex rostrata* around the margins; and on the few remaining patches of M18 *Sphagnum papillosum* in places such as Whixall Moss. Drained bogs such as Steel Heath tend to succeed to M25 *Molinia caerulea* or to W4 *Betula pubescens*, in both of which it remains abundant.

Elsewhere on the plain it is associated with the nutrient-poor soils of heaths such as Prees Heath, where it grows in U1 *Rumex acetosella* grass-heath. It is much more common in upland areas such as the Long Mynd and the Stiperstones, where it is characteristic of H8 *Ulex gallii*, H9 *Deschampsia flexuosa* and H12 *Vaccinium myrtillus* heath, typically in that order at increasing altitude. At Cramer Gutter it is frequent in the characteristic M15 *Trichophorum germanicum* wet heath.

In grasslands and woodlands it is not so frequent, nor usually so abundant. It is an occasional component of U20 *Pteridium aquilinum* community, as at Perkin's Beach. At Rhos Fiddle it grows in U4 *Agrostis capillaris* and U5 *Nardus stricta* grassland. At Sowdley Wood and The Ercall it grows in W16 *Quercus petraea* woods, and at Oaks Wood in W17 *Leucobryum glaucum* woodland. At Brown Moss it was successfully (but unnecessarily) reintroduced to some of the degraded heathland by strewing cuttings gathered on the Stiperstones (this also brought in *Erica tetralix*) but without management the area soon started to resemble a woodland again. A similar operation at Prees Heath

used brash collected at Cannock Chase in Staffordshire to seed areas that had been deep ploughed, with mixed success.

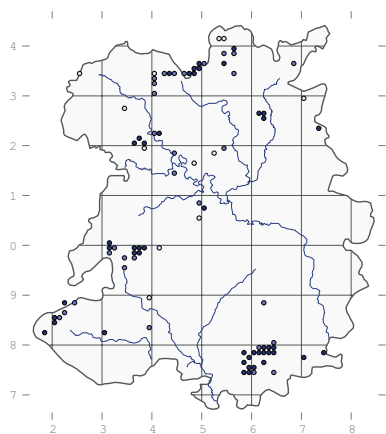
### *Erica tetralix* L.

#### Cross-leaved Heath

Native. Local. Decreasing. Axiophyte: bogs and heaths.

First record: Williams, c. 1800, 'dry heaths and bogs, common. Variety with white blossoms near Ellesmere.'

In a variety of heathland types, usually on rather wet soils. Recorded in H8 *Ulex gallii* heath at Cramer Gutter; H9 *Deschampsia flexuosa* at Lower Short Ditch; M2 *Sphagnum fallax* lawn on Hodnet Heath, Lin Can Moss, Wem Moss and Whixall Moss (Trueman, 1981); M15 *Trichophorum germanicum* at Cramer Gutter; M16 *Sphagnum compactum* at Hodnet Heath; and M25 *Molinia caerulea* at Steel Heath.

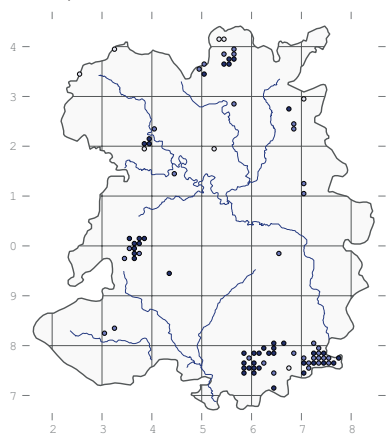


### *Erica cinerea* L.

#### Bell Heather

Native. Local. Decreasing. Axiophyte: heaths.

First record: Williams, c. 1800, 'rocks and heaths, common.'



Typical of the drier heaths such as H8 *Ulex gallii* at Cramer Gutter and Prees Heath, extending into the wetter M15 *Trichophorum germanicum* at Cramer Gutter and the even drier U1 *Rumex*

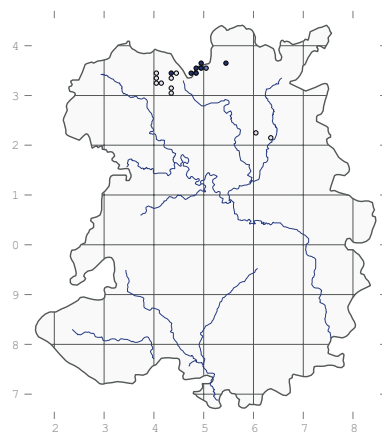
*acetosella* at Prees Heath. It is well known in places like Catherton Common (first recorded by J.B. Duncan in 1909), the Stiperstones (L.C. Lloyd, 1968) and the Wyre Forest (W.E. Beckwith, 1892). On the Long Mynd it is very rare, being recorded only in New Pool Hollow, and it has gone from Brown Moss and many other lowland sites.

### *Andromeda polifolia* L.

#### Bog-rosemary

Native. Scarce. Decreasing. Axiophyte: raised mires.

First record: W. Coote & G. Bowles, 1632, 'in great quantity at Birch in the moores of Ellesmere.'



In lowland raised mires, where it is most typical of the hummocky M18 *Sphagnum papillosum*, which is characterised by having a floating acrotelm permanently raised above the surface water. However, although this may be the natural habitat of *A. polifolia*, it is a long-lived perennial and it can persist in drying mires where the conditions are no longer quite right for it. In most places it is recorded in M2b *Sphagnum fallax* lawns, in places such as Clarepool Moss, Wem Moss and Whixall Moss (Trueman, 1981). At Steel Heath it used to grow in M25 *Molinia caerulea* (in 2000), where the mire has almost dried into woodland.

It must once have been quite widespread on the north Shropshire plain, but it has only been recorded in about a dozen sites. Birch was a part of the Moors of Ellesmere, which stretched southward from the Mere for a mile or so, but were drained when the canal was put through at the end of the 18<sup>th</sup> century. Leighton saw the Bog-rosemary there in the 1830s, but it was last recorded in 1893 by J.D. Gray. It was first recorded at Clarepool Moss in 1880 by W.E. Beckwith and it was still there in 2003, but it was very rare. It also still occurs at Wem Moss

(first recorded by E.M. Rutter in 1957) and the adjacent Whixall Moss (T.W. Wilson, 1836) but it seems to have gone from all other sites. These include Cold Hatton Moss (T.C. Eyton, 1841), Cole Mere (Phillips, 1905), Ellerdine Moss (F. Dickinson, 1841), Lyneal Moss (J.W. Heath, 1894), Sweat Mere (Phillips, 1905) and Whattall Moss (J.E. Bowman, 1841 and W. Beacall, 1905).

### *Gaultheria shallon* Pursh

#### Shallon

Neophyte. Rare.

Planted as game cover in Bird's Wood, Hatton Grange (SJ770048, Lockton, 2009, BIRM).



*Vaccinium vitis-idaea* (Dan Wrench)



*Galium uliginosum* at Black Coppy



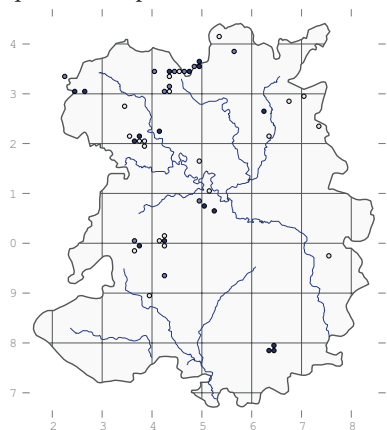
## *Vaccinium oxycoccos* L.

### Cranberry

Native. Local. Decreasing. Axiophyte: bogs and wet heaths.

First record (as Marsh Whortleberry): T. Johnson, 1639, Shakeford Mill.

Most abundant on M2 *Sphagnum fallax* lawns in places like Clarepool Moss, Hodnet Heath, Lin Can Moss, Snipe Bog, Wem Moss and Whixall Moss (Trueman, 1981), sometimes extending into the marginal lagg of M4 *Carex rostrata*, as at Clarepool Moss, and often persisting in W4 *Betula pubescens* Lin Can Moss, Shomere Pool and elsewhere. At Cramer Gutter it grows in M15 *Trichophorum germanicum* heath. It has been lost from a number of sites, mainly in the lowlands and, apart from Catherton Common, it is quite rare in upland sites.



## *Vaccinium macrocarpon*

Aiton

### American Cranberry

Recorded by Sinker at Calcott Moss in 1968, but not seen there since.

## *Vaccinium vitis-idaea* L.

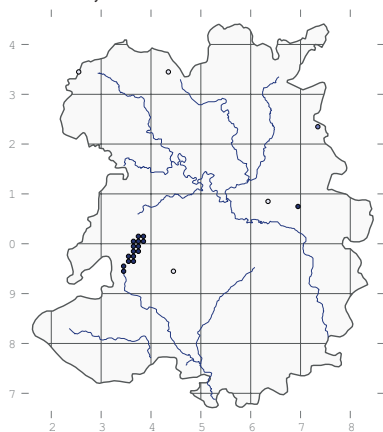
### Cowberry

Native. Scarce. Declining. Axiophyte: heathland and bogs.

First record: L. Brown, 1726, the Stiperstones.

The only place where it is abundant is on the Stiperstones, where it grows all along the ridge from Black Rhadley to the Devil's Chair in the highest stands of heathland. The vegetation here is H12 *Vaccinium myrtillus* heath, replaced by H9 *Deschampsia flexuosa* on the slopes, where *V. vitis-idaea* becomes rarer. It also grows on a pitmound in Telford Town Park, where it was discovered by J. Davies of Ironbridge in 1980. It seems to have gone from Puleston Common, where B.R. Fowler recorded it in 1978, and from three historical sites: Clarepool Moss (W. Phillips, 1905), Selattyn Hill (O.M.

Feilden, 1909), and the Long Mynd (R.M. Serjeantson, 1881, SHY).



## *Vaccinium × intermedium*

Ruthe

### Hybrid Bilberry

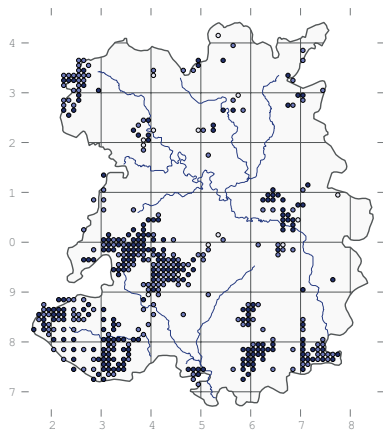
Recorded on the Stiperstones by Sinker in 1968 and in several places by A.K. Thorne (conf. K.V. Cavallot) in 2002 and 2007. There is some doubt about its identification.

## *Vaccinium myrtillus* L.

### Bilberry

Native. Local. Stable. Axiophyte: moors, heaths, woods and bogs.

First record: 'a student of physick', 1727, Stiperstones Hill.



In heathland on most of the hills, including H8 *Ulex gallii* in Carding Mill Valley (Trueman, 1981), at Cramer Gutter and on the Stiperstones; H9 *Deschampsia flexuosa* at Catherton Common (Trueman, 1981), on the Long Mynd, at Lower Short Ditch, the Stiperstones and the Wrekin (Trueman, 1981); and H12 *Vaccinium myrtillus* on the Long Mynd (C.M. Owen, 1983), the Stiperstones and Rhos Fiddle. At Cramer Gutter it also occurs in M15 *Trichophorum cespitosum*, and it is recorded in U4 *Agrostis capillaris* at Rhos Fiddle; U5 *Nardus stricta* on the Stiperstones and Titterstone Clea (Trueman, 1981 and A.K. Thorne,

1999); and in U20 *Pteridium aquilinum* in Perkins Beach. It is a common component of the ground flora in upland woods such as W16 *Quercus petraea* at Oaks Wood, Sowdley Wood, the Ercall and Withybed Wood (Trueman, 1981) and W17 *Leucobryum glaucum* at Oaks Wood.

## *Pyrola minor* L.

### Common Wintergreen

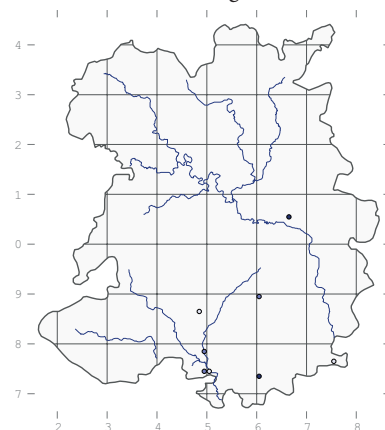
Native. Rare. Axiophyte.

First record: T. Salwey, 1841, Whitcliffe Wood.

This is a woodland plant in Shropshire, seemingly confined to ancient W8 *Fraxinus excelsior* woods. It has rarely been recorded in the same place twice, but why it should be so transient is unknown. The only recent site for it is at Lydebrook Dingle, where occurred in a superb woodland ground flora that had developed in an astonishingly short time (a few decades at most) on dumped fuel ash from Ironbridge Power Station (Lockton & Whild, 1996).

Another recent site was Knowle Wood near Clee Hill. Sinker (1985) reports that it was found by L.W. Poel in the 1950s but, if so, it was also independently found by J.M. Gray and S.W. Greene in 1963, who collected a specimen which was confirmed by J.G. Hawkes who wrote up the finding in local natural history journals and the Proceedings of the BSBI. It was apparently still there in 1987, when it was seen by M.B. Fuller & H. Hand, but there are no subsequent records.

At Whitcliffe Wood it has been recorded many times, by T. Salwey, A. Bloxam (both before 1841), W. Phillips (1871 & 1889), R.M. Serjeantson (1878), G.C. Druce (1892), J.C. Voysey (1962) and S.R. Turner (1971). Other old recorded sites include a coppice below Diddlebury Common (Salwey, 1841), the Wyre Forest (G. Jordan, 1856), near Stanton Lacy (E. Armitage, 1925), and Oldfield Coppice (D. Stoves, 1974, conf. F.H. Perring).



[*Pyrola media* Sw. Intermediate Wintergreen

The few records that there are of this species in Shropshire reveal a catalogue of errors. They give rise to a cluster of dots on the map in the New Atlas that are hundreds of kilometres south of the nearest extant populations. In 1842 F. Westcott published a record of it in Whitcliffe Coppice, but he was rather unreliable. G. Jordan included it in his list of plants of the Wyre Forest (1856), but without any supporting evidence. W. Phillips collected a specimen at Whitcliffe in 1889 that was confirmed as *P. media* by A. Bennett (Hamilton, 1909), but his specimen, still at SHY, is *P. minor*. Finally, in 1925 E. Armitage, who was a reliable botanist from Herefordshire, found *P. minor* in a wood at Stanton Lacy, but J.C. Melvill took it upon himself to speculate that *P. media* might also be present, and that was somehow turned into a record added to the manuscript of Hamilton's Flora and repeated in Sinker's Flora. In summary, there is no reliable evidence yet of this plant occurring in the county.]

### *Pyrola rotundifolia* L.

#### Round-leaved Wintergreen

Native. Rare. Casual. Woods.

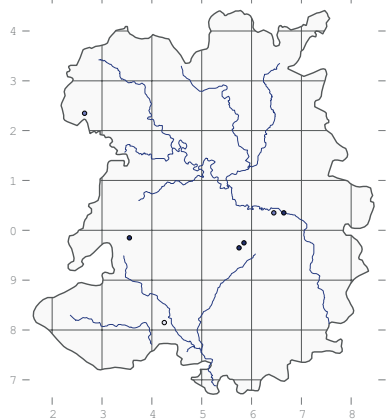
Leighton (1841) gave a record by Henry Spare of this species at Whitcliffe Wood (SO4873), but this is surely another error for *P. minor*. In 1988 it was found by R.J. Mantle in an abandoned quarry at Poles Coppice, but it was never seen there again.

### *Hypopitys monotropa* Crantz

#### Yellow Bird's-nest

Native. Scarce. Stable. Axiophyte: woodland and scrub.

First record: A. Aikin, 1796, 'woods between Coalbrookdale and Coalport'



In ash woodland or willow scrub, usually over limestone. It is restricted to a few parts of the county, where it is fairly persistent, but not always in quite the same place. It has recently been recorded on Benthall Edge (G. Potts,

1927 – J.D. Box, 1985) which is probably also Aikin's site; Blakeway Coppice, especially Lilleshall Quarry (found by A.R. Franks in 1974 and still present); and Pennerley (found by A.K. Thorne in 2007). In the past it was also known at Blodwel Rocks (Sinker, 1962), Stoke Wood (G.S. Poole, 1892) and Tick Wood (G. Potts, 1912 – W.B. Allen, 1922). It seems to be largely restricted to ancient woodland sites, although its habitat is often in disturbed places or in scrub.

## Garryaceae

### *Aucuba japonica* Thunb.

#### Spotted-laurel

Neophyte. Scattered.

A common shrub in gardens and amenity plantings, sometimes introduced as pheasant cover or an ornamental in woods, as at the Mere, and Acklands Coppice.

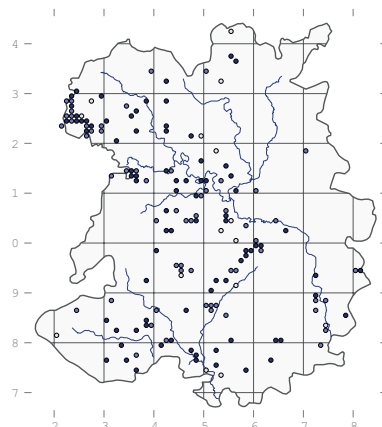
## Rubiaceae

### *Sherardia arvensis* L.

#### Field Madder

Native. Local. Increasing. Axiophyte: grassland, arable fields, quarries.

First record: Williams, c. 1800, 'clover and cornfields, common.'



Occasional in bare patches of grazed grassland such as horse-grazed MG5 *Festuca rubra* pasture at Oreton and rabbit-grazed U1 *Rumex acetosella* at Prees Heath. On Abbot's Castle Hill it grows in U1 grassland and patches of OV24 *Urtica dioica* on the more eroded patches (both Trueman, 2005). It is also recorded in OV15 *Anagallis arvensis* in an arable field at Filletts Farm and OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1982). There are considerably more dots on the map now than in Sinker's Flora and it seems possible that it might be increasing.

[*Asperula cynanchica* L., Squinancywort

Recorded in error by G.H. Griffiths (c. 1870), 'Ragleth and Chelmick, abundant.']

### *Asperula arvensis* L.

#### Blue Woodruff

A casual near Buildwas (W.B. Allen, Transactions 1907).

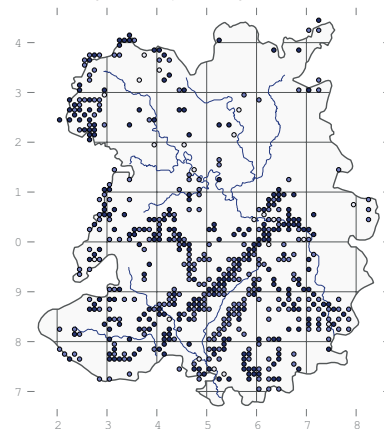
### *Galium odoratum* (L.) Scop.

#### Sweet Woodruff

Native. Local. Stable. Axiophyte: ancient woodland and species-rich hedgerows.

First record: W. Withering, 1787, 'on the north side of the Wrekin.'

Almost entirely restricted to W8 *Fraxinus excelsior* woods and a few roadside banks with similar vegetation, often in fairly damp situations. It seems not to spread to new sites easily, although sometimes it has been recorded recolonising disturbed ground in quarries from adjacent woodland, as at Lea Quarry on Wenlock Edge. At Silvertrees Ash Tip in Loamhole Dingle it occurs amongst typical woodland ground flora on fuel ash heaps from Ironbridge Power Station. Occasionally it is cultivated in gardens and can spread onto roadside verges. At Old Oswestry it persists in a woodland ground flora several decades after the trees were cleared. Good places to see it include Benthall Edge Wood and Bakeway Coppice, but it also occurs in almost all the calcareous woods in the county. Earl's Hill seems to be not quite base-rich enough for it, and it is very rare on the banks of the Habberley Brook. It can be recorded all year round but is most noticeable when flowering in early spring.



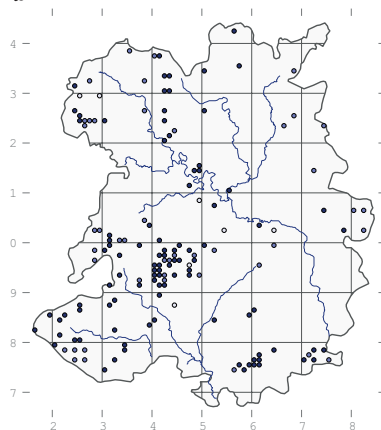
## *Galium uliginosum* L.

### Fen Bedstraw

Native. Local. Declining. Axiophyte: fens and upland flushes.

First record: Williams, c. 1800, 'boggy grounds.'

This species replaces *G. palustre* in the more base-rich wetlands, including M22 *Juncus subnodulosus* fen-meadow at Crose Mere and in a range of communities at The Old River Bed in Shrewsbury, including S7 *Carex acutiformis* swamp, S10 *Equisetum fluviatile* and OV26 *Epilobium hirsutum* tall herb vegetation. On the Long Mynd and other upland sites it is more likely to be found in M23 *Juncus effusus* flushes.



*Gentiana pneumonanthe*



*Nonea lutea*

## *Galium palustre* L.

### Marsh Bedstraw

Native. Common. Stable. Wetlands.

First record: Williams, c. 1800, 'ditches and sides of ponds.'

Widespread in ditches, marshy grassland, swamps and wet woods. It is uncommon in heaths, but at Rhos Fiddle it grows in H12 *Vaccinium myrtillus* heath. In grassland it is recorded in MG5 *Festuca rubra* grassland on Haughmond Hill and Morton Pool (A. Hillman, 1993); MG8 *Caltha palustris* at Crose Mere and Ruewood; MG10 *Holcus lanatus* at Brown Moss, Brown's Corner (Trueman, 1981), Hope Coppice, Larkfield Farm (Trueman, 1981) and Fenemere (C. Walker, 1988); and MG13 *Alopecurus geniculatus* at Fenemere.

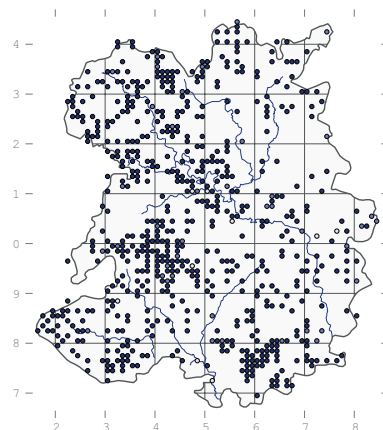
There are many records of it in mires such as M6 *Carex echinata* in Colliersford Gutter (R. Tapper, 1983); M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979), Morton Pool and Trefonen Marshes (both Trueman, 1981); in many stands of M23 *Juncus effusus* in both lowland and upland situations; M24 *Cirsium dissectum* at Crose Mere; M27 *Filipendula ulmaria* at Black Coppice and the Mere at Ellesmere; M35 *Montia fontana* in Lightspout Hollow and Wild Moor (both R. Tapper, 1983); and M36 *Chrysosplenium oppositifolium* in Poles Coppice.

It occurs in OV26 *Epilobium hirsutum* swamp at Bomere Pool; and on bare mud on the margins of meres it is recorded in OV30 *Bidens tripartita* at Marton Pool, Chirbury (Wigginton, 1979); OV32 *Ranunculus sceleratus* at Oxon Pool; and OV35 *Lythrum portula* at Brown Moss and Llyn Rhuddwyn (Trueman, 1981). Then there are many records of it in swamps, including S3 *Carex paniculata* at Fenemere (B.D. Wheeler, 1986) and S4 *Phragmites australis* (Wigginton, 1979) at Sweat Mere, S7 *Carex acutiformis* in the Old River Bed, S9 *Carex rostrata* in Wildmoor Pool (Trueman, 1981), S10 *Equisetum fluviatile* in the Old River Bed, S11 *Carex vesicaria* and S12 *Typha latifolia* at the Long Bog, S14 *Sparganium erectum* at Kettle Mere, S17 *Carex pseudocyperus* at Oxon Pool, S24 *Calamagrostis canescens* at Fenemere, S26 *Phragmites australis* at Oss Mere, S27 *Comarum palustre*

at Berrington Pool, and S28 *Phalaris arundinacea* at the Mere.

Finally, it is rather common in wet woodland, particularly W1 *Salix cinerea* in places like Calcott Moss, Shomere Pool, Snipe Bog and the Moors, Ellesmere; W4 *Betula pubescens* at Calcott Moss, Haughmond Hill, Lin Can Moss, Bomere and Shomere Pools; in many stands of W5 and W6 *Salix* × *fragilis* around meres and along rivers throughout; in W7 *Lysimachia nemorum* at Birchen Park and Brook Vessons; W8 *Fraxinus excelsior* at Bushmoor Coppice; and W10 *Quercus robur* on Haughmond Hill and around Shrawardine Pool.

*Galium palustre* ssp. *palustre* Clapham is widespread (first record: W. Phillips, 1870, SHY, det. F.H. Perring) as is ssp. *elongatum* (C. Presl) Arcang. (J.C. Melvill, 1911, 'water meadows at Meole Brace, once only' (Record of Bare Facts 21, 1912)).



## *Galium verum* L.

### Lady's Bedstraw

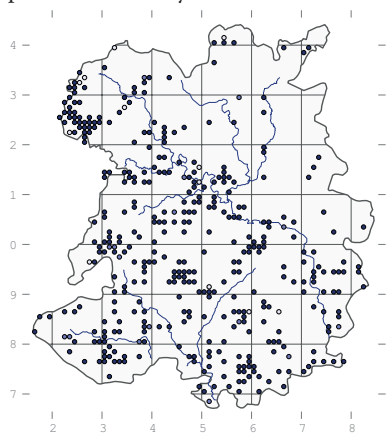
Native. Local. Stable. Grassland.

First record: Williams, c. 1800, 'borders of fields and hills.'

Frequent in calcareous grassland, especially CG2 *Avenula pubescens* in places like Ballstone Quarry, Llanymynech Rocks, Moelydd and Windmill Hill; CG3 *Bromopsis erecta* at Hilltop, Lea Quarry and Stokes's Barn (Trueman, 1981); CG7 *Thymus polytrichus* on rock outcrops at Presthope; and CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Llynclys Hill. It is also recorded in MG1e *Centaurea nigra* grassland at Shelton Rough and on Windmill Hill; in MG5 *Festuca rubra* in many places, including Llynclys Hill, Moelydd and Windmill Hill; and U1 *Rumex acetosella* on Abbot's Castle Hill, Haughmond Hill, Rytton churchyard and on Titterstone Clec (Trueman, 1981). It is mostly restricted



to unimproved grassland, but it also occurs on road verges and it is widespread except in the most arable parts of the county.



### *Galium* × *pomeranicum*

Retz. (*album* × *verum*)

#### Hybrid Yellow Bedstraw

First record: A. Ley, 1881, Whitcliffe (BIRM).

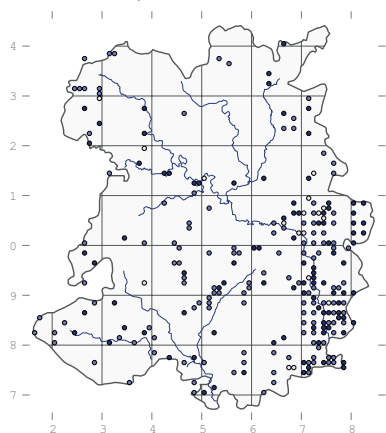
In MG5 *Festuca rubra* grassland at Hilltop Meadow (R.M. Stokes, 1994) and MG1 *Arrhenatherum elatius* grassland on a verge at Berrington (SJ527072, BIRM). Also recorded on a roadside verge at Trefonen (SJ264274, R.A. Dawes, 2007, conf. S.J. Whild, BIRM) and in a churchyard at Boraston (SO613700, P.R. Green, 2010).

### *Galium album* Mill.

#### Hedge Bedstraw

Native. Local. Stable. Grassland and hedges.

First records (as *G. mollugo*): Williams, c. 1800, 'hedges about Shifnal and Coalbrookdale; Quat.'



Typical of species-rich hedges, usually on base-rich soils and notably more abundant in the warmer, south-east part of the county. Recorded in MG1 *Arrhenatherum elatius* grassland on the verge of a farm track at Lanegreen, and in both MG5 *Festuca rubra* and CG3 *Bromopsis erecta* (D.H. Wrench, 1994) grassland in meadow at Hilltop. A

possible subspecies, *G. mollugo* ssp. *erectum* Syme, Upright Hedge Bedstraw, has been recorded in several places, originally by W. Phillips in 1871 at Shrewsbury Racecourse (SHY).

[*Galium pumilum* Murray, Slender Bedstraw

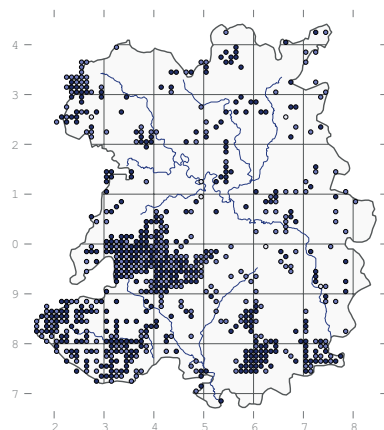
Lloyd & Rutter (1957) claimed that this species is recorded on Titterstone Clee but gave no details. Sinker (1985) changed this to *G. sternerii* but cast doubt on its veracity. By coincidence, a typographical error resulted in John Bingham being wrongly attributed a record for the same place (Lockton & Whild 1995). There is therefore no good evidence for it in the county.]

### *Galium saxatile* L.

#### Heath Bedstraw

Native. Local. Stable. Heathland, upland grassland and open woods.

First record: Williams, c. 1800, 'on heaths and ditch banks, common.'



Frequent in the hills and on peaty soils in the lowlands, often in heaths such as H8 *Ulex gallii* in Carding Mill Valley (Trueman, 1981) and on the slopes of the Stiperstones; H12 *Vaccinium myrtillus* on higher ground in New Pool Hollow (Trueman, 1981) and at Nipstone Rock. It is rarer in mesotrophic grasslands, being recorded only in MG5c *Danthonia decumbens* on Llynclys Hill and at the Thrift (D.H. Wrench, 1995). In mires, it is sometimes found in M6 *Carex echinata*, as on Stapeley Hill (Trueman, 1981), in M15 *Trichophorum germanicum* at Cramer Gutter, in M25 *Molinia caerulea* at Steel Heath, and even in M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983).

Most records are for upland grassland such as U1 *Rumex acetosella* on Earl's Hill (A.K. Thorne, 2002), Prees Heath, Stapeley Hill, Titterstone Clee (Trueman, 1981) and Rabbit Warren; U2 *Deschampsia flexuosa* at Brown Moss; U4 *Agrostis capillaris* on Brown Clee, on a road verge at Cwm Collo, at

Rhos Fiddle and in a pasture at Shelve (Trueman, 1981); U5 *Nardus stricta* at Rhos Fiddle, Squilver (Trueman, 1981), the Stiperstones and Titterstone Clee (Trueman, 1981); and in U20 *Pteridium aquilinum* at Gogbatch (C.M. Owen, 1983) and Titterstone Clee (Thorne, 1999). Finally, it is recorded in W16 *Quercus petraea* at Poles Coppice (Trueman, 1981), Clarepool Moss, the Ercall and Oaks Wood; W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood; and in W23 *Ulex europaeus* scrub derived from W16 woodland on Old Oswestry.

### *Galium aparine* L.

#### Cleavers

Native. Common. Stable. Woods, hedges, arable fields.

First record: Williams, c. 1800, 'hedges, common.'

Primarily a woodland plant, often present in small quantities and sometimes abundant in W6 *Salix* × *fragilis* woods alongside rivers such as the Severn in Shewsbury or the Worfe at Beckbury. It is also recorded in W5 *A. glutinosa* at Sweat Mere (Packham, 1970); W7 *Lysimachia nemorum* along the Habberley Brook at Upper Vessons; W8 *Fraxinus excelsior* in many places, including Blakeway Coppice, Limekiln Wood and Wynett Coppice; W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* at Bushmoor Coppice, Haughmond Hill and Oss Mere. It is especially common in hedges and scrub such as W21 *Crataegus monogyna* scrub on Earl's Hill and by the Shrewsbury Canal at Uffington and W24 *Rubus fruticosus* hedgebanks in lanes at Abdon, Chatwall and Nobold.

It is frequent in overgrown grassland such as CG3 *Bromopsis erecta* at Ballstone Quarry; MG1 *Arrhenatherum elatius* on roadsides at Brandwood, Preston Roadford and elsewhere; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG5 *Festuca rubra* on a roadside at Guilden Down and a field of pasture at Hayton's Bent (D.H. Wrench, 1995); MG9 *Deschampsia cespitosa* at Cole Mere; MG10 *Holcus lanatus* at Hope Coppice; and M22 *Juncus subnodulosus* fen-meadow at Sweeny Fen (A. Hillman, 1992). At Abbot's Castle Hill it is recorded in U1 *Rumex acetosella* grassland (Trueman, 2005). It is rare in swamps, but is recorded in S3 *Carex paniculata* swamp at Marton Pool, Chirbury, and S26 *Phragmites australis* swamp at Black Coppice, Marton Pool and Top Pool.

It often colonises disturbed and eutrophic habitats such as OV10 *Senecio vulgaris* community in an arable fields at Eudon George and Lower Faintree or waste ground at Newport and Shifnal (the last two by Trueman, 1981); OV15 *Anagallis arvensis* at Filletts Farm; OV19 *Tripleurospermum inodorum* on a road verge at Tong; OV23 *Dactylis glomerata* on a road verge at Tong (both Trueman, 1981); OV24 *Urtica dioica* by the Severn in Shrewsbury; OV25 *Cirsium arvense* on field margins at Kingshead and Norton, Stockton (Trueman, 1981); and OV26 *Epilobium hirsutum* in the Old River Bed, Shrewsbury.

[*Galium tricornutum* Dandy, Corn Cleavers

'Fields near Little Stretton' (G.H. Griffiths, c. 1870). In 1914 J.C. Melvill made a tentative record of it not in flower near Sharpstones Hill and planned to go back to look for it again, but evidently without success. In 1948 E.A. Wilson recorded it along the sandy lane to Plas-yn-Grove but he did not collect a specimen.]

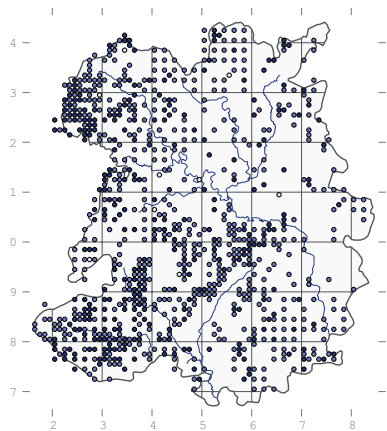
### *Cruciata laevipes* Opiz

#### Crosswort

Native. Local. Decreasing. Roadside verges, churchyards, river and canal banks.

First record: Williams, c. 1800, 'hedges, common.'

Occasional on road verges, by tracks and sometimes in open, ungrazed grassland, generally on base-rich soils. It is typical of more species-rich patches of MG1 *Arrhenatherum elatius* grassland on verges throughout and is recorded in CG3 *Bromopsis erecta* in Lea Quarry.



## Gentianaceae

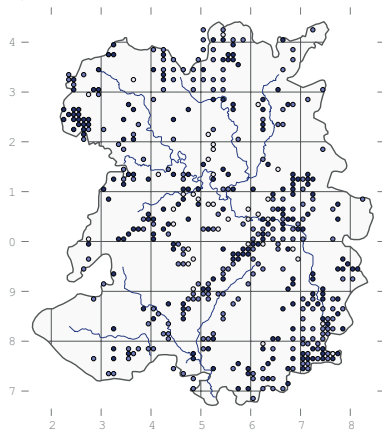
### *Centaurea erythraea* Rafn.

#### Centaury

Native. Local. Decreasing. Grassland, quarries, bare ground.

First record (as *Chironia centaureum*): Williams, c. 1800, 'pastures, common; var. with white blossoms about Eaton.'

Typical of bare ground, sometimes persisting in grassy swards on calcareous soils. It is recorded in CG2 *Avenula pubescens* in Pattens Rock Quarry (Trueman, 1981); CG3 *Bromopsis erecta* in Lea Quarry; CG7 *Thymus polytrichus* in Farley, Nantmawr and Lilleshall quarries; MG5 *Festuca rubra* at Wagbeach and Crickheath Hill (both Trueman, 1981); and U1 *Rumex acetosella* at Prees Heath and Lilleshall Quarry. On Prees Heath it also grows in H8 *Ulex gallii*. A good place to see it is in Dolgoch Quarry, where it has been recorded many times since it was first recorded by E.M. Rutter in 1955.



### *Blackstonia perfoliata* (L.)

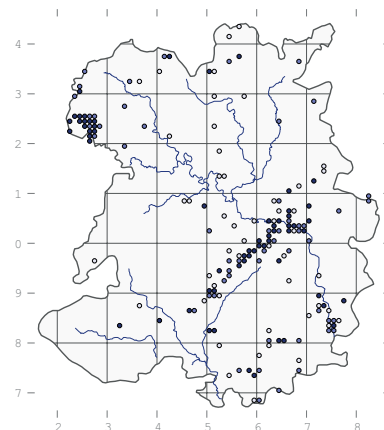
#### Hudson

#### Yellow-wort

Native. Local. Decreasing. Axiophyte: quarries, grassland, road verges.

First records (as *Chlora perfoliata*): Williams, c. 1800, 'pastures about Buildwas, Chelmarsh, Bitterley, Clee Town etc; plantation between Uffington and Haghmon Hill; about the lime-kilns on Stevens Hills in the parish of Cound. Forge-bank, Eaton.'

On bare ground and grassland in limestone districts. Recorded in CG2 *Avenula pubescens* at Dolgoch Quarry, on Llyncllys Hill and in Ballstone Quarry; CG3 *Bromopsis erecta* in Lea Quarry; CG7 *Thymus polytrichus* at Nantmawr Quarry; and in MG5 *F. rubra* grassland on Moelydd and Roman Bank.



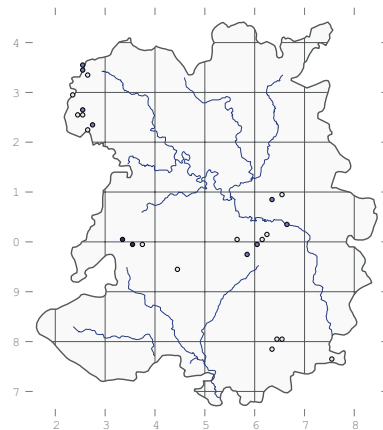
### *Gentianella campestris* (L.)

#### Börner

#### Field Gentian

Native. Rare. Decreasing. Grassland and mine spoil.

First record: W.P. Brookes, 1834, 'top of Wenlock Edge, above the road from Wenlock to Harley.'



One of the most rapidly declining species in Britain, seemingly heading towards extinction in England, although it is still widespread in Scotland. It grows in open grassland, usually on quite acidic soils although in Shropshire the historical sites are mostly on limestone. Leighton (1841), for instance, listed it at Benthall Edge (Leighton), Wenlock Edge (T.C. Eyton), Limekiln Wood (Eyton), and Moelydd (T. Salwey). George Jordan (1856) recorded it at Oreton, Farlow and Catherton Common. It was still present in some of these sites in the 20th century, e.g. Benthall Edge, 1950 (N. Mackenzie) and Coates Quarry on Wenlock Edge, 1978 (M.E. Chadd).

It was first found on the Stiperstones in 1892 (Miss F.C. Benson). This is more like its normal habitat – acidic soils and plenty of disturbed areas such as quarry waste. At the Napp and Pennerley Meadows it was seen by C. Walker in 1985 and by P. Parker in 1986, and at Roman Gravels it was recorded by A. Huckbody in 1986 and

by Trueman in 1987; but there are no records of it since then. Other places it has been recorded include the Long Mynd (W. Phillips, 1873), the Wyre Forest (W.B. Allen, 1905) and Llynclly Hill (Mackenzie, 1972).

### *Gentianella amarella* (L.)

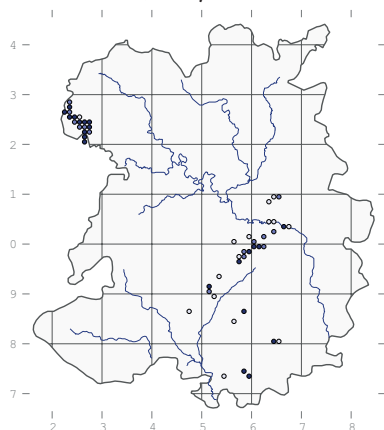
Börner

#### Autumn Gentian

Native. Local. Stable. Axiphyte: limestone grassland.

First records (as *Gentiana amarella*): Williams, c. 1800, 'by the side of the road up Wenlock Edge above Harley; pastures between Clee St Margaret and Abdon; between Westhope, in the parish of Diddlebury, and Strefford; and as you ascend Wenlock Edge from Kenley to Lutwych; pastures above Buildwas and between Buildwas Abbey and Wenlock.'

In calcareous grassland, typically CG2 *Avenula pubescens*, as at Ballstone Quarry, Craig Sychtyn and Llynclly Hill; or CG7 *Thymus polytrichus*, as in Lilleshall Quarry. It is largely restricted to old quarries, but it does grow in more natural grassland on Moelydd. Other current sites for it include Pattens Rock Quarry, Llanymynech Rocks (K.A. Crowther, 1998) and Roman Bank (J. Clayfield, 2003).



### *Gentiana pneumonanthe* L.

#### Marsh Gentian

Native. Rare. Stable. Axiphyte: wet heath.

First record: Anon., 1829, 'Llanymynach' (CGE).

The small population at Cramer Gutter occurs in M15 *Trichophorum germanicum* wet heath. It was first recorded there in 1962 by Sinker, but he was shown it by Miss Aston, who said it had been there for at least a couple of decades. It seems unlikely that it could have been overlooked there by George Jordan in the 19<sup>th</sup> century, so perhaps it is a fairly recent colonist. The field where it grows was described by M.J. Wigginton in 1981

as a hay meadow, but it has suffered neglect since then and often becomes overgrown with H8 *Ulex gallii* scrub, with occasional attempts at clearance or burning. The population of gentians has declined from three patches to just one, and in number from 200 to fewer than 20 in recent years.

## Apocynaceae

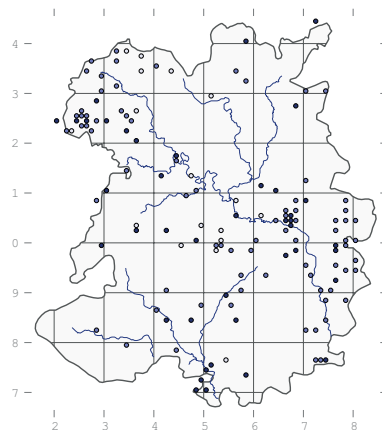
### *Vinca minor* L.

#### Lesser Periwinkle

Archaeophyte. Scattered. Stable. Gardens, roadsides, woods.

First record: Williams, 1832, 'in the plantation adjoining Berwick laundry.'

A garden plant, recorded by Trueman (1981) in OV21 *Plantago major* in a garden in Pant, but in the wild it is typically found in W8 *Fraxinus excelsior* woodland, as at Jones's Rough, where it is naturalised by the ruins of a cottage. It does not seem particularly invasive, although stands a few metres across can form in time. In some places it grows in hedges by the side of a road, where it is either planted or a garden throw-out.



### *Vinca major* L.

#### Greater Periwinkle

Neophyte. Scattered. Stable. Gardens, roadsides, woods.

First records: Williams, c. 1800, 'hedges in Cound, Berrington, Acton Burnell, Eyton on the Wildmoors, Shelton, etc, etc; on the right-hand side of the road between Atcham and Tern Bridge; between the turnpike and Battlefield.'

A common garden throw-out, established on roadsides and waste ground throughout the county.

## Boraginaceae

[*Lithospermum purpureocaeruleum* L., Purple Gromwell]

Listed in the account of a field meeting to Benthall Edge (*Transactions for the year 1932*) but the record was never published in the *Record of Bare Facts*, and it was probably just a mistake.]

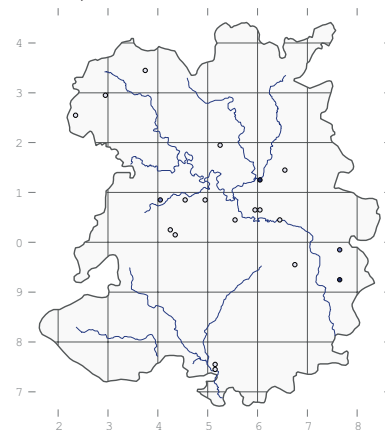
### *Lithospermum arvense* L.

#### Field Gromwell

Archaeophyte. Rare. Casual. Arable fields and waste ground.

First record: Williams, c. 1800, 'cornfields, common.'

A very rare introduction with seed, recorded recently in the yard of a grain supplier at Allscott (J. Handley, 2011) and in a wood called Bridal Coppice on the Morfe near Bridgnorth (W.E. Hutton, 1986), where it would probably have been introduced with pheasant food. It was common as an agricultural weed in the 18<sup>th</sup> century: J. Babington (in Plymley 1803) wrote 'a common inhabitant of corn-fields. I have found it on the wall of Ludlow,' but in 1841 Leighton described it as occurring in 'corn-fields, not common.' Since then there have been only sporadic records of it, and the last one from an arable field was in 1980, at Hinton (B.R. Fowler).



### *Lithospermum officinale* L.

#### Common Gromwell

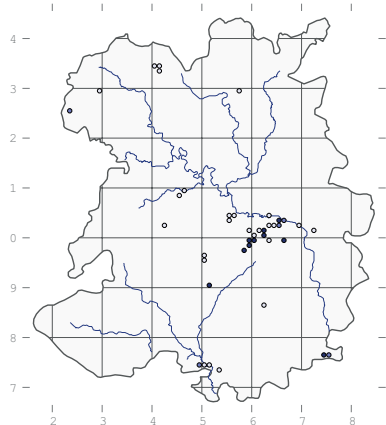
Native. Local. Decreasing. Axiphyte: quarries and woods.

First records: Williams, c. 1800, 'upon the bank of Ludlow Castle; on the right hand side of the road between Wenlock and the Marsh; on the right hand side of the road up the hill from Coalport; on left hand side of the road above Harley turnpike; walls in Cleobury North; woods and thickets between Buildwas and Wenlock; and walls of Red Castle near Hawkstone.'

On roadsides, on disturbed ground in limestone quarries and by tracks



in woods. It is frequent along the top of Wenlock Edge around Lea Quarry and Roman Bank; it is still present on Benthall Edge ('a small patch in a clearing under pylons,' SJ655030, A.K. Thorne, 2007) where it was first recorded by Miss Darby in 1832; and it is very rare in the Wyre Forest (SO746764, R. Winnall, 1997) where it has been recorded several times since 1841 (G. Jordan). It seems to have gone from places like Buildwas (last recorded by W.H. Painter in 1900), Coalport (Beckwith, 1880), Craig Sychtyn (M. Wainwright, 1982), Stevenshill (W. Beacall, 1905), and Whitcliffe (J.S. Baly, 1835 – R.M. Serjeantson, 1909). Lowland: up to 275 m at Roman Bank (SO514906, 2012).



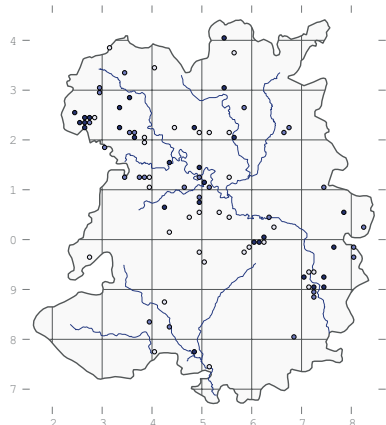
### *Echium vulgare* L.

#### Viper's Bugloss

Native. Local. Stable. Axiphyte: grassland, quarries, roadsides.

First record: L. Brown, 1726, 'in ye sandy road between Bridgnorth and Swancott.'

On patches of eroded or bare soil in CG2 *Avenula pubescens* in Ballstone Quarry and on Windmill Hill and CG7 *Thymus polytrichus* in Nantmawr Quarry. It also grows on waste ground in places like the railway line east of Shifnal (D.H. Wrench, 2007) and near the lime kilns at Porth-y-waen (S. Swindells).



### *Echium plantagineum* L.

#### Purple Viper's-bugloss

A rare casual, formerly known on an old railway line at Buildwas (W.B. Allen, 1907 and J.C. Jinks, 1910, SHY) and more recently as a contaminant in bird seed grown on the bird reserve at Venus Pool (J. Martin, 2010).

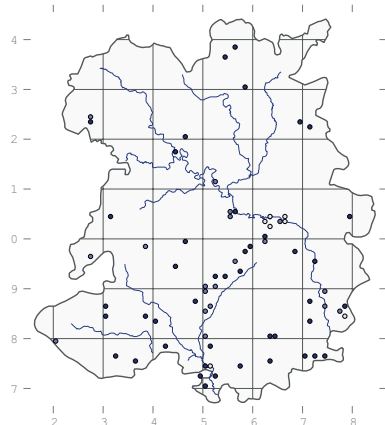
### *Pulmonaria officinalis* L.

#### Lungwort

Neophyte. Local. Increasing. Roadsides, hedge banks, woods.

First record: H. Moseley, c. 1837, 'a variety with white flowers... near Buildwas' (Leighton 1841).

A widespread garden escape, thriving on the more calcareous soils and sometimes becoming established in W8 *Fraxinus excelsior* woods such as The Hope (SO512787, C.M. Dony, 1955 – M.S. Duffell, 2008), Blakeway Coppice and by the Borle Brook at Ray's Bridge. It often starts out from garden waste dumped in old quarries such as the small one at Harton Hollow (A.K. Thorne, 2006) and Knowle Quarry (A. Ashwell, 1981), both of which are also succeeding to W8 woodlands. It is not invasive, though, and it tends to die out after a while.



[*Pulmonaria longifolia* (Bast.) Boreau, Narrow-leaved Lungwort

Reported by A.E. Ruthven-Murray at Halford in 1917 (*Record of Bare Facts* 27, 1918), probably in error.]

[*Nonea rosea* (M. Bieb.) Link, Pink Nonea

Recorded by G.C. Druce in woods behind Church Stretton in 1911 (*Record of Bare Facts* 21, 1911 & *RBF* 26, 1917). This species has never been confirmed in Britain.]

### *Nonea lutea* (Desr.) DC.

#### Yellow Monkswort

Neophyte. Rare. Casual. Gardens and pavements.

Growing as a weed in flower borders and in cracks in pavements on Victoria St., Shrewsbury, in 2010 (SJ497130, Whild, conf. D.A. Pearman, BIRM) and since.

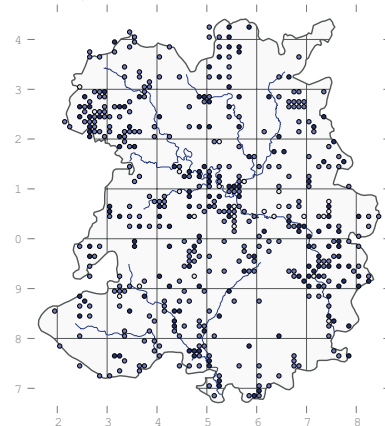
### *Symphytum officinale* L.

#### Comfrey

Native. Widespread. Stable. River banks.

First records: Williams, c. 1800: 'by the side of the brook in several places between Pitchford and Cound; plentifully in meadows by the side of the brook at Shiffnal; meadows adjoining Sutton Maddock; side of Conover Brook; by the side of the brook at Ruyton, near Beckbury; with purple blossoms by the side of the Tern at Duncot.'

On riverbanks, recorded so far only in OV32 *Ranunculus sceleratus* by the Roden near Tilley, but often seen in taller vegetation such as *Epilobium hirsutum* tall herb. Although it is sometimes found with Russian Comfrey, for example on the banks of the Rea Brook at Redhill Coppice, it tends to occur in more obviously wild places and is less likely to be a garden outcast. It is vulnerable to grazing along the upland rivers and is rare in some of the more intensively arable areas. Sinker (1985, p. 247) recorded it at tetrad level, but only mapped the colour variants.



### *Symphytum × uplandicum*

Nyman (*asperum* × *officinale*)

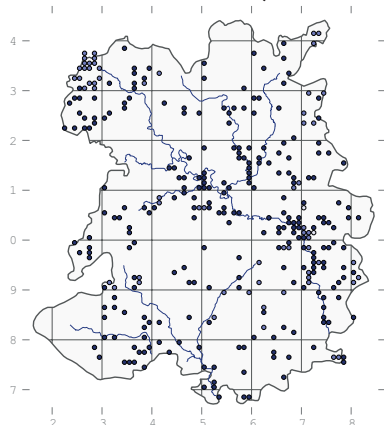
#### Russian Comfrey

Neophyte. Widespread. Increasing. River banks, canals, waste ground.

First record (as *S. peregrinum*): Painter, 1894, Sutton Maddock (NOT, SHY).

Grown in gardens as a natural source of fertilizer and, formerly, for fodder. It was introduced in Britain in 1870, and it

quickly became established in the wild, where it spreads rhizomatically to form extensive stands, often on river banks or in damp grassland. On the floodplain of the Severn opposite Shrewsbury Castle it is significant component of the ground flora in W6d *Sambucus nigra* woodland, but it also grows on road verges in MG1 *Arrhenatherum elatius* grassland and on disturbed ground in quarries such as the old Whitehaven Quarry (now Llynclys Quarry) (Perring, 1975). Generally lowland, but above 350 m on roadsides at Pennerley.



### *Symphytum asperum*

Lepechin

#### Rough Comfrey

Neophyte. Rare.

A specimen at BFT (Queen's University, Belfast) collected by W.H. Painter at Sutton Maddock in July 1894 has apparently been determined by Perring as *S. asperum*, according to the Vascular Plants Database, but Sinker (1985, p. 248) wrote 'FHP does not believe [*S. asperum*] to be naturalised in the Shropshire region', possibly considering it to have been cultivated. The only other record for the county is by B.R. Fowler, on a roadside verge near Chetwynd Grange (SJ716211, 1977) – again rejected by Sinker. Assuming the identifications were correct, it could be described as barely naturalised near houses.

### *Symphytum tuberosum* L.

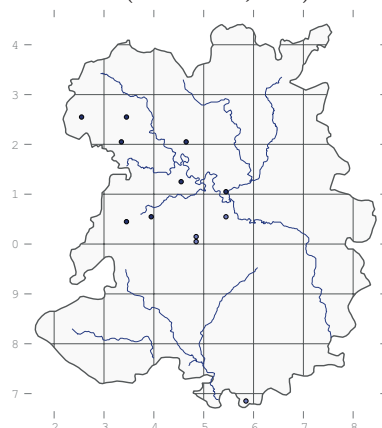
#### Tuberous Comfrey

Neophyte. Scattered. Increasing. Roadsides and waste ground.

First record: Sinker, 1965, 'established on the roadside at Longnor Bridge.'

Grown in gardens and occasionally found established in the wild, usually on roadsides where garden waste has been dumped. It can be quite vigorous, as at Chatwall, where it covers the verges for many metres and spreads into the adjacent secondary woodland (first recorded here by N.M.

Mackenzie in 1972). Elsewhere it has been recorded in places such as a semi-wild garden at Attingham Park, a roadside at Kinnerley (T.F. Preece, 1992), Merrington Green, Nills Hill Quarry, by the River Teme at Burford (J.J. Day, 1984) and in an old farmyard at Trefonen (R.A. Dawes, 2007).



### *Symphytum* × *hidcotense*

P.D. Sell

#### Hidcote Comfrey

On a roadside at Chetwynd Heath (SJ712222, B.R. Fowler, 1978, det. A.C. Lesley) (*BSBI News* 30, 1982) and well established by a stream at Llanymynech Heritage Area (SJ2621, P. Martin, 2000).

### *Symphytum grandiflorum*

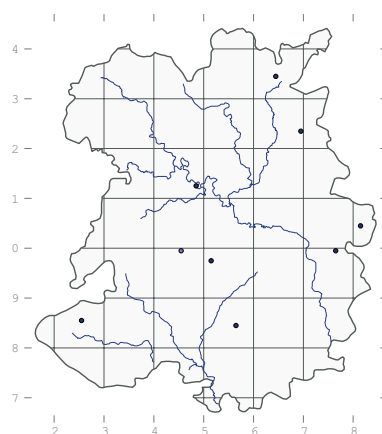
DC.

#### Creeping Comfrey

Neophyte. Scattered. Increasing. Gardens, churchyards, roadsides.

First record: S.R. Turner, 1968, Chatwall (*Transactions* 1973).

Well established on several roadside verges, including ones at Albrighton, Clee St Margaret, Howle, Longford, Skeltons Bank (at 402 m, SO25678577, 2007), Smethcott (H.M. Davidson, 1979); still present and overwhelmingly abundant on a road verge, extending into secondary W8 *Fraxinus excelsior* woodland at Chatwall.



### *Symphytum orientale* L.

White Comfrey

Neophyte. Rare.

A rare garden escape, established in the grounds of Maesbury Mill (E.R. Lloyd, 1927) and Benthall Hall (W.A. Thompson, 1982 – S. O'Donnell, 1995).

### *Symphytum caucasicum* M.

Bieb.

#### Caucasian Comfrey

Neophyte. Rare.

A rare garden escape, established at Monkmoor Sewage Works (SJ523136, 2000, conf. F.H. Perring, BIRM) and Lamledge Industrial Estate, Shifnal (SJ759074, R.M. Stokes, 2005).

### *Anchusa officinalis* L.

Alkanet

There are two records for Shropshire: at Oakly Park (H. Spare, 1841) and by the Severn at Ironbridge (A.H. Trow, c. 1857 (Hamilton 1909)). It was formerly cultivated in Britain and is a rare casual. It is worth noting that Spare also recorded both Bugloss and Green Alkanet, so it was not a simple misidentification. Both records could be correct, but there is no independent confirmation and Sinker (1985) did not include them.



*Myosotis discolor* (Dan Wrench)



*Symphytum tuberosum*

## *Anchusa arvensis* (L.) M. Bieb.

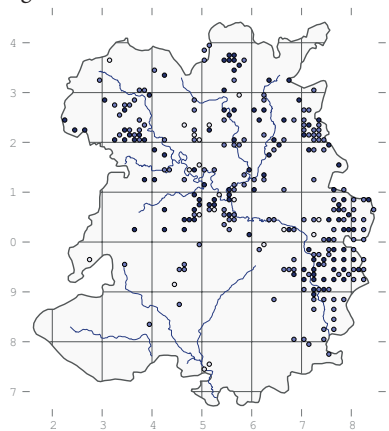
### Bugloss

Archaeophyte. Local. Stable.

Axiophyte: arable fields, sand quarries.

First record (as *Lycopsis arvensis*): Williams, c. 1800, 'pastures, roadsides, common.'

In the east of the county this is a common weed of arable fields, but it is largely absent from the west even in arable areas. Although it is primarily a weed of sandy arable fields, the only vegetation community it has been recorded in is U1 *Rumex acetosella* grassland at Abbot's Castle Hill (Trueman & Cohn, 2005). It has also been recorded as a weed in sand quarries such those at Buildwas (E.M. Rutter, 1959), Conover (D.H. Wrench, 2004) and Cound (A.K. Thorne, 2006). A good place to look for it is at Prees Heath, where it has been thriving since the site was deep ploughed by Butterfly Conservation, exposing plenty of bare, light sand.

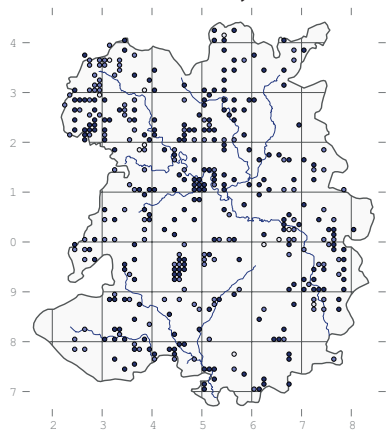


## *Pentaglottis sempervirens* (L.) Tausch ex L. Bailey

### Green Alkanet

Neophyte. Widespread. Increasing. Roadsides, lane sides, canal banks, old quarries.

First record (as *Anchusa sempervirens*): Williams, c. 1800, 'by the side of the road between Barrow and Willey.'



Edward Lhwyd is alleged to have introduced this species at Llanforda in the 17<sup>th</sup> century, but there are no specific records of it there until 1855 (T. Salwey). It is widespread throughout the county on hedgebanks near houses but it does not really spread into wild places.

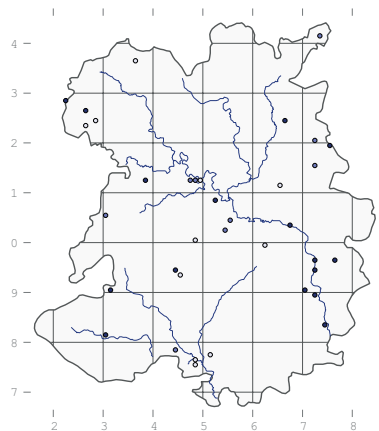
## *Borago officinalis* L.

### Borage

Neophyte. Scattered. Casual. Gardens, field margins, waste ground.

First records: Longnor (W. Corbett), Oakly Park (H. Spare), between Wellington and Ketley (E. Lees), Bromfield, and Whitbatch (both M. McGhie) (all in Leighton 1841).

Cultivated in gardens and occasionally found on roadsides, waste ground, abandoned gardens and field margins where topsoil has been deposited, but it does not seem to persist. There are recent records of it on soil mounds in a field at Guilden Down (J. Clayfield, 2006), by the Severn Valley Railway at Highley, at Childs Ercall and on a roadside at Lincoln Hill.



## *Trachystemon orientalis* (L.) Don

### Abraham-Isaac-Jacob

Neophyte. Rare.

An uncommon garden escape, recorded on a lane side in Broseley (SJ664018, W.A. Thompson, 1982), near Albrighton (SJ830035, B.R. Fowler, 1985) and by a footpath near the Buckatree Hall Hotel on the Ercall (SJ640097, S. Lewis, 2005).

## *Amsinckia micrantha* Suksd.

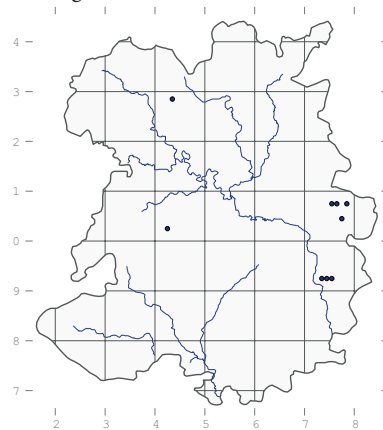
### Common Fiddleneck

Neophyte. Scattered. Increasing. Waste ground and arable fields.

First record: A.K. Thorne, 1991, 'in disturbed grassland at Beach Bank, Pulverbatch.'

A cereal contaminant and colonist of bare ground. There are records of it

on a field edge at Barnsley (J. Brown, 1993), in set-aside at Cockshutt (Thorne, 2005), in a field of beet at Shifnal, on waste ground at Shifnal Industrial Estate (R.M. Stokes, 1992-1994), in an arable field at Stanmore (N.P. Jones, 2009) and in a cereal field at Tong (Stokes, 2005).



## *Asperugo procumbens* L.

### Madwort

A former arable weed: 'by the side of a road near the junction of the river Corfe with the river Teme' (J. Babington, 1803), near Buildwas (W.B. Allen, 1907), and in a hedge at Little Stretton (S.E. Chandler, 1940).

## *Myosotis scorpioides* L.

### Water Forget-me-not

Native. Local. Stable. Rivers, canals, ditches, marshy grassland.

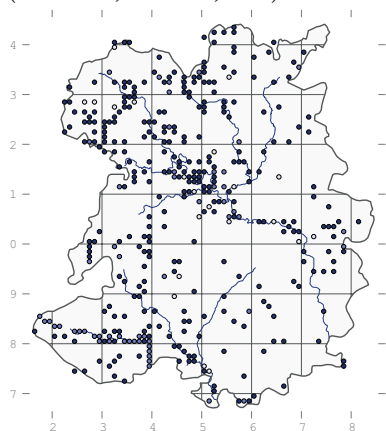
First record: Williams, c. 1800, 'ditches, common.'

In a variety of wetland habitats, usually somewhat eutrophic and not too shady. Characteristic of OV32 *Ranunculus sceleratus*, in which it is recorded on the banks of the Roden at Tilley and on mud on the edge of Oxon Pool. It is also recorded in MG10 *Holcus lanatus* in field ditches at Broncroft; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* on lake margins on Brown Clee and Ebnal Pool (both Trueman, 1981), around Cole Mere (Wigginton, 1979) and at Oxon Pool; OV26 *Epilobium hirsutum* by the Severn at Shrewsbury Castle; OV30 *Bidens tripartita* at Marton Pool, Chirbury; and OV31 *Rorippa palustris* at Fenemere (both Wigginton, 1979).

Sometimes it is recorded in swamps such as S17 *Carex pseudocyperus* at Oxon Pool; fens such as S24 *Calamagrostis canescens* at Fenemere (Wigginton, 1979); and it persists in wet woodland such as W5 *Alnus glutinosa* at Cole Mere and Morton



Pool; or W6 *Salix* × *fragilis* by rivers at Cosford Wood, Loamhole Dingle and Shelton Rough. Generally lowland, but up to 510 m on Brown Clee (SO596866, Trueman, 1981).



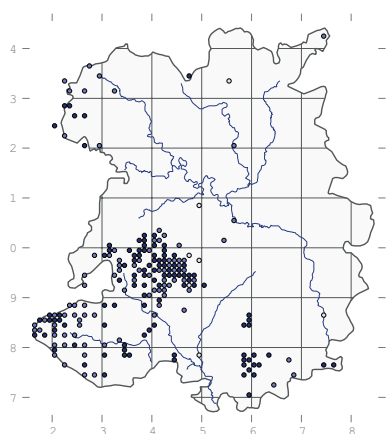
### *Myosotis secunda* A. Murray Creeping Forget-me-not

Native. Local. Decreasing. Axiphyte: upland flushes.

First record (as *M. palustris* var. *strigulosa*): Leighton, 1830, 'foot of the Lawley' (SHY).

A largely upland plant, typical of flushes and pools in the hills but formerly present around some of the meres. So far there are only two vegetation communities where it has been recorded: M23a *Juncus acutiflorus* at Rhos Fiddle and the Stiperstones, and M35 *Montia fontana* at Boiling Well (Trueman, 1980).

*Myosotis secunda* does grow at Wem Moss but it has been inconsistently recorded at some of the other meres and mosses; several of those records are clearly errors. Notable places for it in the uplands include Wild Moor (first recorded by H.M. Davidson in 1979), Titterstone Clee (A.W. Weyman, 1909), Hope Bowdler (W.E. Thompson, 1904), Hopesay Hill (Trueman, 1987), Llyn Rhuddwyn and Stapeley Hill (both Perring, 1975). It appears to be retreating to its upland strongholds, where populations seem to be stable.



### *Myosotis laxa* Lehm Tufted Forget-me-not

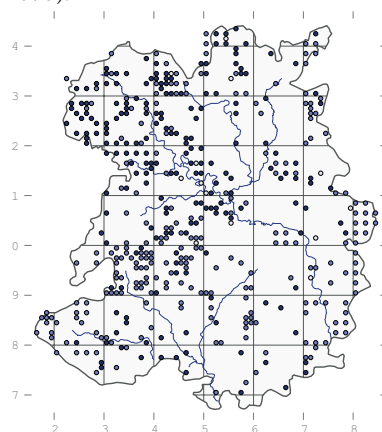
Native. Local. Stable. Pools and lakes.

First record: Leighton, 1836, Oxon Pool (SHY).

Around meres and in ditches, typically in less eutrophic and often shadier situations than *M. scorpioides*. It is recorded in MG13 *Alopecurus geniculatus* grassland at Brown Moss and Ruewood (both Trueman, 1980-81); M22 *Juncus subnodulosus* at Trefonen Marshes (Trueman, 1981); and in M23 *Juncus effusus* at Cole Mere (M.J. Wigginton, 1979) and Black Coppice.

On the edges of pools and lakes it is found in OV30 *Bidens tripartita* community at Brown Moss and Newton Mere (Wigginton, 1979); OV31 *Rorippa palustris* at Brown Moss; OV32 *Ranunculus sceleratus* at Crose Mere and White Mere; and OV35 *Lythrum portula* at Llyn Rhuddwyn (Trueman, 1981).

In swamps it is found in S9 *Carex rostrata* at Wildmoor Pool (Trueman, 1981); S12 *Typha latifolia* at Brown Moss and the Long Bog; and in S14 *Sparganium erectum* and S27 *Comarum palustre* at Brown Moss. It is occasional in wet woodland such as W1 *Salix cinerea* scrub at Calcott Moss and Shomere; W5 *Alnus glutinosa* carr at Crose Mere, Oss Mere, Shrawardine Pool and Top Pool; and W6 *Salix* × *fragilis* at Hencott Pool and Brown Moss. Generally lowland but up to 440 m on the Stiperstones (SO369981, 1995).



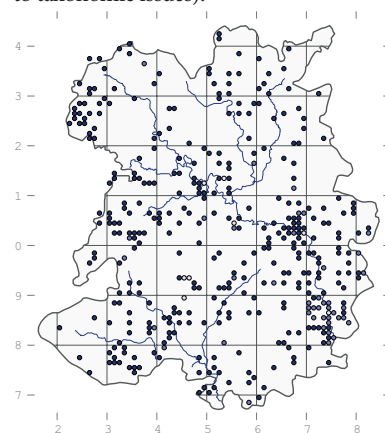
### *Myosotis sylvatica* Hoffm. Wood Forget-me-not

Native. Widespread. Increasing. Gardens, woods, river banks.

First record: Leighton, 1841, 'dry shady places, common.'

Typical of damp woods such as W6b *Salix* × *fragilis* woodland at the Mere,

or damp grassland on road verges and riverbanks, such as MG1 *Arrhenatherum elatius* grassland on the verge of a farm track at Brockton, Worthen. It is often grown in gardens and escapes onto nearby road verges and woodland edges, but it is also often scattered throughout woods, particularly W8 *Fraxinus excelsior* such as Benthall Edge Wood, Lydebrook Dingle, and the woods along the Borle Brook around New England. Recording of this species in the past has been patchy owing to uncertainties about whether to record introduced populations, and confusion with large-flowered forms of *M. arvensis* (early records in particular are unreliable owing to taxonomic issues).



### *Myosotis arvensis* (L.) Hill Field Forget-me-not

Native. Widespread. Dry grassland, arable fields, waste ground.

First record (as *M. scorpioides* α and β varieties): Williams, c. 1800, 'dry pastures, common.'

In dry grassland, mainly U1 *Rumex acetosella* grassland in places like Lilleshall Quarry, Prees Heath and Earl's Hill; CG3 *Bromopsis erecta* in Lea Quarry; and CG7 *Thymus polytrichus* on the floor of Nantmawr Quarry. Also a characteristic inhabitant of arable fields, in OV10 *Senecio vulgaris* community in Welshampton (Trueman, 1981) and OV15 *Anagallis arvensis* at Filletts Farm. Sometimes it persists in open scrub such as W21 *Crataegus monogyna* on the slopes of Earl's Hill and in W24 *Rubus fruticosus* scrub on a wall at Stevenshill or a hedgebanks at Pentre Hodre.

## *Myosotis ramosissima*

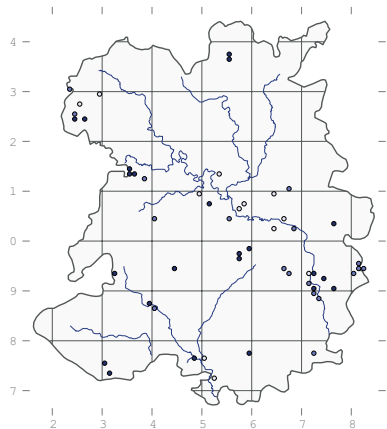
Rochel

### Early Forget-me-not

Native. Local. Stable. Axiphyte: upland grassland.

First record (as *M. collina*): Leighton, 1836, Haughmond Hill (BON, CGE).

An early spring ephemeral of free-draining sandy or rocky ground, typically on south-facing slopes in acid U1 *Rumex acetosella*, as at Lilleshall Quarry and Rabbit Warren, or in its limestone analogue, CG10 *Helianthemum nummularia* at Presthope viewpoint. It occurs on some of the hills in the south of the county, such as Caer Caradoc at Clun and Stow Hill (both J. Clayfield, 2003), and it is reasonably common along Wenlock Edge, particularly in quarries such as Lilleshall and Lea. It occurs in fine U1 grassland at Bridgnorth Cemetery and on nearby Hermitage Hill, and on sandy field margins at Hatton Grange. As a plant of infertile soils, it seems a reasonable axiphyte despite its affinity for quarries. One of the best places to look for it is Loton Park.



*Atropa belladonna*

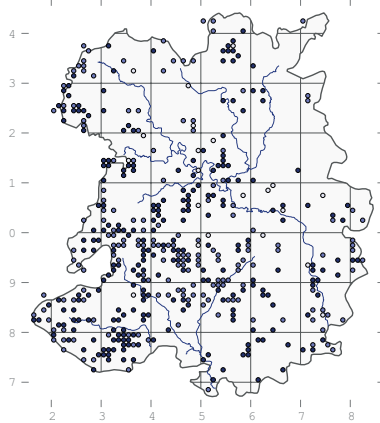
## *Myosotis discolor* Pers.

### Changing Forget-me-not

Native. Local. Increasing. Axiphyte: grassland.

First record: Leighton, 1835, Pimhill (SHY).

On bare patches in sandy or stony grassland on hills, hedgebanks and waste ground. It is most typical of U1 *Rumex acetosella* grassland in places like Abbot's Castle Hill (Trueman, 2005), Attingham Park, Earl's Hill (A.K. Thorne, 2002), Haughmond Hill and Prees Heath; also recorded in MG5 *Festuca rubra* on Stapeley Hill (Trueman, 1981), MG6 *Cynosurus cristatus* in Earlsdale and Meverley Farm, MG7e *Plantago lanceolata* in a sandy field at Rudge (Trueman, 1981) and, usually, in MG8 *Caltha palustris* at Meverley Farm. In Buildwas Sand Quarry, Trueman (1982) found it in OV22 *Taraxacum officinale* vegetation.



## *Omphalodes verna* Moench

### Blue-eyed Mary

Neophyte. Rare.

Established on a roadside near the Rectory at Chetton in 1912 (G. Potts).

## *Cynoglossum officinale* L.

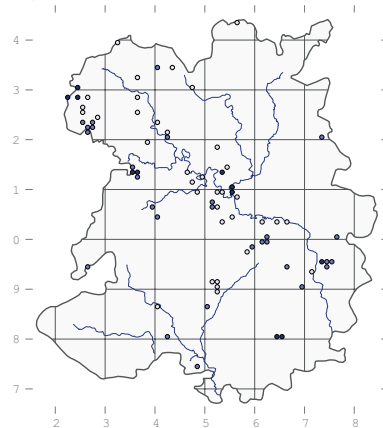
### Hound's-tongue

Native. Scarce. Decreasing. Axiphyte: grassland.

First record: Williams, c. 1800, 'roadsides, common.'

On dry, sandy banks, often on slightly base-rich soils. A typical habitat for it is in bare patches in horse-grazed MG5 *Festuca rubra* pasture at Oreton. There are recent records of it at Attingham Park, Craig-y-rhiw, Haughmond Hill, Loton Park (P. Parker, 1992) and a grassy bank south of Nightbrook Plantation (R.M. Stokes, 2002). In the past it was fairly frequent throughout the lowlands, especially along the valley of the Severn, and it seems to have gone

from places like Llanymynech (last recorded by E.D. Pugh, c. 1984) and Llyncllys (J.H. Owen, 1945) and Earl's (H.F. Pendlebury, 1941) hills, partly because grazing levels are too low since myxomatosis killed off so many rabbits.



[*Cynoglossum germanicum* Jacq., Green Hound's-tongue

Recorded (as *C. sylvaticum*) by M. McGhie in the neighbourhood of Ludlow (Leighton, 1841). This record is almost certainly an error. Referring to that, C.R. Darwin wrote to Leighton in 1841 with a description of the plant in a site in Shrewsbury, but the information he gave is sufficient to identify it with some confidence as *C. officinale* (Botanical Society Newsletter 10, 6-8 (2004)).]

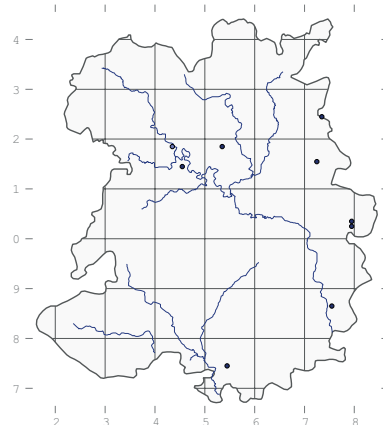
## *Phacelia tanacetifolia* Benth.

### Phacelia

Neophyte. Scattered. Increasing. Arable fields.

First record: Sinker, c. 1980, 'roadside opposite Grafton School.'

Occasional in field margins, where it is sometimes included in seed mixes for conservation headlands. There are recent records of it in farms at Lilleshall (R.M. Stokes, 1995), Hampton Loade (Stokes, 2001), Whiston Cross (H.V. Hughes, 2004), Lower Ledwyth (J. Stone, 2004), Upper Astley (M.S. Duffell, 2008) and Mow Cop.



## Convolvulaceae

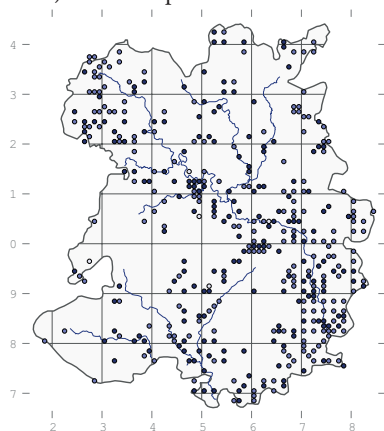
### *Convolvulus arvensis* L.

#### Field Bindweed

Native. Local. Stable. Field margins, hedgebanks, river banks, railway embankments.

First record: L. Brown, 1726, 'in ye corn-fields about Bishop's Castle.'

In ungrazed rank grassland on field edges and roadsides in the lowlands. A typical habitat for it is MG1 *Arrhenatherum elatius* grassland beside the towpath of the Severn in Shrewsbury or around the overgrown margins of the meadow on Windmill Hill, and it grows in ungrazed CG3 *Bromopsis erecta* in Hilltop Meadow. It is most common on base rich soils in river valleys or in the limesone districts; a good place to see it is along Blakeway Hollow on Wenlock Edge. Lowland: up to about 250 m at The Moat, Bettwys-y-crwyn (F.H. Perring, 1977) and Hilltop.



### *Calystegia sepium* (L.) R. Br.

#### Hedge Bindweed

Native. Common. Increasing. Hedges and river banks.

First record (as *Convolvulus sepium*): Williams, c. 1800, 'hedges, gardens and banks of rivers.'

In hedges and waste ground, most often in damp places such as ditches and riverbanks. In similar places to *C. silvatica*, but it is more common in rural areas away from towns. Plants in Shropshire are *C. sepium* ssp. *sepium*, and the deeply lobed forma *schizoflora* (Druce) Stace has been recorded twice (Rednal, Lockton, 1998; Walkmill Marsh, R. Bennett, 2001).

It is a plant of fens and tall herb by rivers, in mesotrophic to eutrophic conditions. At Marton Pool, Chirbury, it was abundant in S26 *Phragmites australis* fen in 2005, and at Oss Mere it has been recorded as a frequent

but not abundant constituent of W5 *Alnus glutinosa* woodland in 1979 (M.J. Wigginton) and 2005. At the Mere at Ellesmere, it favours S28 *Phalaris arundinacea* and M27 *Filipendula ulmaria* tall herb, and in winter-flooded land by the Severn in Shrewsbury it grows in OV26 *Epilobium hirsutum* vegetation.

### *Calystegia* × *lucana* (Ten.) G. Don (*sepium* × *silvatica*)

#### Hybrid Bindweed

Native. Occasional. Increasing. Waste ground.

First record: G. Kitchener, 2004, Ludlow Castle.

These two species hybridise freely and form partially fertile offspring which can then backcross and create hybrid swarms. It occurs found in gardens in Shrewsbury (SJ499133, 2009, BIRM), in a hedge at Kingshead (SO475769, 2010) and by the Severn at Bewdley (SO7875, 2010).

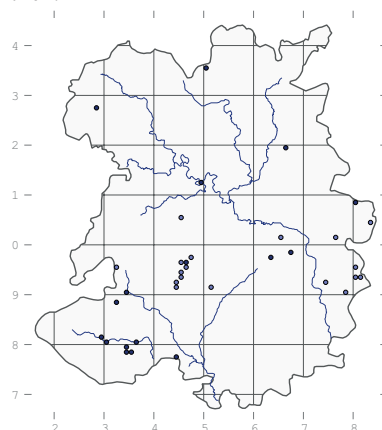
### *Calystegia pulchra* Brummitt & Heyw.

#### Hairy Bindweed

Neophyte. Occasional. Stable. Roadside hedges and gardens.

First record: E.M. Rutter, 1963, roadside verge at Rushbury (SHY).

A pink-flowered bindweed of horticultural origin, largely restricted to gardens and towns. In Shrewsbury it grows in the vicinity of the castle and in gardens near the prison, and in All Stretton it occurs in garden hedges. In the west of the county it is more likely to be found in rural hedges, for example by the turning to Leasowes Farm (SO290812, 2010) west of Clun. It is perennial, flowering in late summer and difficult to record before then.



### *Calystegia silvatica* (Kit.) Griseb.

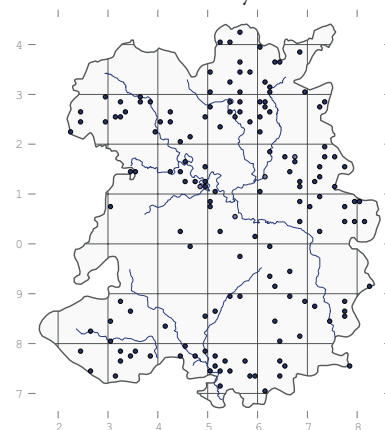
#### Large Bindweed

Neophyte. Widespread. Increasing. Hedges, gardens and waste ground.

First record: E.M. Rutter, 1955, Kingsland, Shrewsbury (SHY).

The similarity of this species to *C. sepium* in both appearance and habitat leads to some confusion. It is believed to have been present in Britain for years before it was first noticed in 1948. Soon afterwards, Rutter collected specimens in Shrewsbury. In Sinker's Flora (1985) it was listed as a subspecies of *C. sepium* and not mapped because of the paucity of records.

It is common in urban areas, more so than *C. sepium*, and it grows in more artificial habitats than the latter, including places such as pavement edges, along railway lines and up wire mesh fences. Sometimes it is abundant in gardens, where it can smother small trees. It is less common in semi-natural habitats, but is still often seen in hedges and has been recorded in OV26 *Epilobium hirsutum* tall herb at the Old River Bed in Shrewsbury.



### *Cuscuta campestris* Yunck.

#### Yellow Dodder

Neophyte. Rare. Casual. Gardens.

In a garden in All Stretton in August 2005, growing over ornamental heathers and penstemons, where it was spotted by the owner, Dick Ward (det. F.J. Rumsey, BIRM). This is an entirely parasitic plant that does not root in the soil. It usually occurs in gardens but does not persist.



***Cuscuta epithymum* (L.) L.**

**Dodder**

Native. Rare. Decreasing. Fields and gardens.

First record: W. Phillips, 1870, 'in a field at Burcott Gate in great luxuriance'.

A parasite of gorse, heather and various other hosts. Its range in Britain has contracted in recent decades and it is now restricted to the southern counties of England. In Shropshire it has been recorded as casual on crops and in gardens, but there are no records since 1984.

Other records include: 'naturalised on gorse at Charlton Hill and Tentree Hill' (W.E. Beckwith, 1880), Kenley (R.M. Serjeantson, 1884 (SHY)), 'on clover in a field near Bomere' (H.E. Forrest, 1894), 'on clover, High Heath, Prees' (J. Ramsbottom, 1907). Wetmore (Miss Luce, 1913) and 'garden weed on carrots, Westoncommon' (P. Parker, 1984).

***Cuscuta epilinum* Weihe**

**Flax Dodder**

'On flax in a field near Crosemere', J.E. Bowman, 29<sup>th</sup> July 1836, conf. Leighton (Leighton, 1841).

***Cuscuta suaveolens* Ser.**

**Fringed Dodder**

Reported by Leighton (as *C. hassiaca* Pfeiff.) at Wigmarsh (Journal of Botany 9, (1871)), based on a specimen collected by J.F.M. Dovaston.

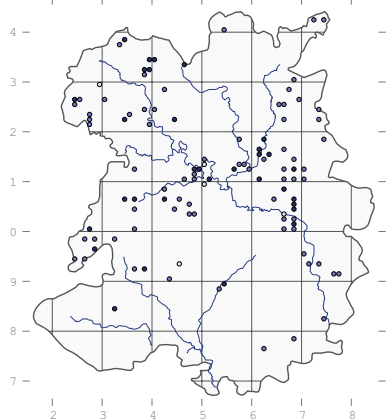
**Solanaceae**

***Lycium barbarum* L.**

**Duke of Argyll's Teaplant**

Neophyte. Scattered. Stable. Hedges and gardens.

First record: T. Butler, 1878, 'Bridgnorth Road, 2½ miles from Shrewsbury' (SHY).



Widespread in hedges, where it seems too common to always be bird sown – sometimes it dominates hedges for many metres. It also survives in abandoned gardens, as at the bottom of Benthall Edge (W.H. Painter, 1905). This species has not always been distinguished from *L. chinense*, but the more recent records suggest that it is indeed the commoner one. A good place to look for it is in the road hedges near Colemere. It rarely fruits in hedges owing to the cutting regime.

***Lycium chinense* Miller**

**Chinese Teaplant**

Neophyte. Rare.

Recorded in roadside hedges at Hanwood (SJ43093, 2007) and Little Weston (SO586715, I.P. Green, 2009).

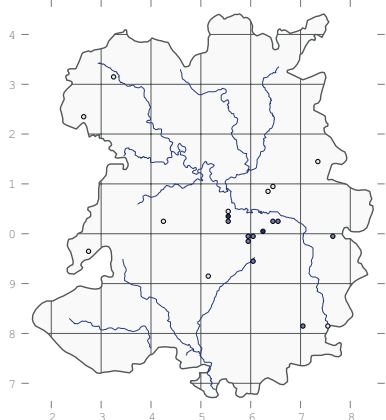
***Atropa belladonna* L.**

**Deadly Nightshade**

Native. Rare. Decreasing. Quarries, grassland.

First records: Williams, c. 1800, 'by side of road opposite the Parsonage house at Cound; among the loose stones below the old lime kilns at Stevens Hill near Cound; within the walls of Lilleshall Abbey'.

Still present at Stevenshill, where there are many plants along the edge of a W8 *Fraxinus excelsior* wood dominated by *Prunus avium*, and a few plants along a path at the top of Shadwell Quarry on Windmill Hill, also on the edge of a W8 wood. In the latter site it was only discovered as recently as 2003, by R.M. Stokes. There are older records for Badger Dingle (S.R. Turner, 1972), Benthall Hall (P. Benthall, 1970), Blakeway Coppice (B.R. Fowler, 1979), Coates Quarry (C. Walker, 1981), Coundmoor (I.R. Bonner, 1970), Kinlet Park (E. Heywood-Waddington, 1981), Kitesnest (Perring, 1974), Lea Quarry (J.A. Warren, 1977) and Wyke (Turner, 1967).



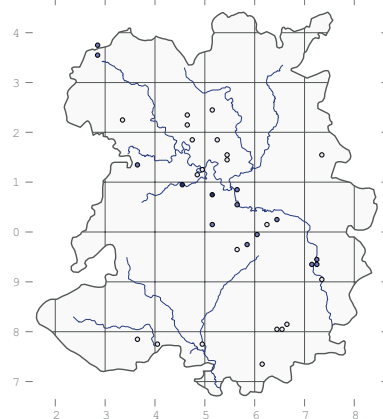
***Hyoscyamus niger* L.**

**Henbane**

Archaeophyte. Rare. Decreasing. Grassland.

First record: Williams, c. 1800, 'waste places and rubbish, common'.

Formerly widespread on base-rich soils, typically on disturbed ground such as rabbit warrens, and often near towns. There are just two recent sites: at Boretton Bank (A.K. Thorne, 1990) which is U1 *Rumex acetosella* grassland, and alongside the Old Potteries Railway at Hanwood Bank (D.H. Wrench, 2003). There are older records for Alberbury Quarry (S. Stafford, 1978), Blakeway Coppice (B.R. Fowler, 1980), Cound Hall (P. Parker, 1980), Frodesley (Stafford, 1978) and on the Roman ruins at Viroconium (Sinker, 1958).



***Nicandra physalodes* (L.)**

**Gärtn.**

**Apple of Peru**

A casual on waste ground near Yockleton (F. Lakes, det. Sinker, 1976) and in Bromfield Quarry (SO480774, N.P. Jones, det. Whild, 2011).

***Datura stramonium* L.**

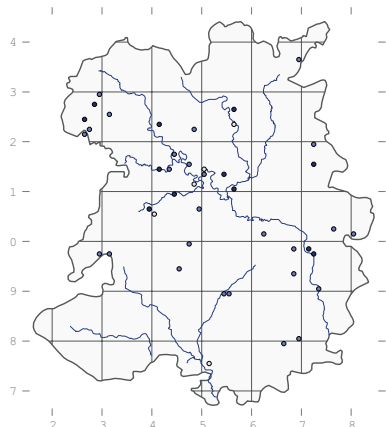
**Thorn-apple**

Neophyte. Scattered. Casual. Waste ground and arable fields.

First records: in Leighton, 1841, 'near Ludlow' (M. McGhie), 'near Pontesford Hill' and Old Heath (D. Crawford).

Occasional on field margins and waste ground, usually as a bird seed contaminant or an arable weed. It rarely persists for more than a year, partly because it is such a distinctive plant so farmers and gardeners tend to eliminate it. It is recorded in a variety of habitats, mostly gardens (12 records of 36 that give details) and arable fields (11), but also in parkland (4), pasture (3), manure heaps (2), allotments (2), a railway

sidings and a road verge. One record, by E.D. Pugh in 1978, was of a plant grown in a pot by a neighbour, which stretches the definition of botanical recording. Because it is such a transient weed, there is nowhere it can reliably be found, but it is reported to come up quite regularly at Montford Farm near Shrewsbury (M. Hoare, 2000).



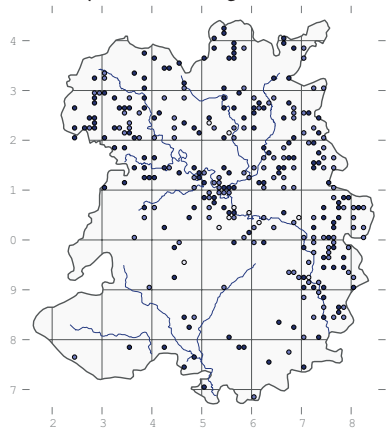
### ***Solanum nigrum* L.**

#### **Black Nightshade**

Native. Local. Stable. Arable fields, river banks, gardens, waste ground.

First record: Williams, c. 1800, 'rubbish, dunghills, sandy lanes.'

An annual of bare ground in a variety of habitats, but it so far it has been recorded only in OV14 *Urtica urens* in an arable field at Edgmond (Trueman, 1981). Other recent records show it growing on a sandy field margin at Puleston Common, on bare mud in Pool 10 at Brown Moss after trees had been cleared, by road works at Morda (R.A. Dawes, 2006), in flower beds in a car park in Shrewsbury, around the edges of the bog at Clarepool Moss (D.H. Wrench, 2008), and in a field of asparagus at Dudmaston (J. Handley, 2009). The ssp. *schultesii* has been recorded on a road verge at Gravel Hill (R.M. Stokes, 1994), in an arable field at Leaton (Stokes, det. T.D. Dines, 1997, BIRM) and on a pavement in Oswestry (M. Wainwright, 1997).



### ***Solanum physalifolium***

Rusby

#### **Green Nightshade**

Neophyte. Rare.

At Norton-in-Hales (B.R. Fowler, det. J.M. Edmonds, 1978) and on disturbed ground at Preston Montford (Whild, 2005, BIRM).

### ***Solanum sarachoides***

Sendtner

#### **Leafy-fruited Nightshade**

Listed for Shropshire, without details, in Edmonds (1981).

### ***Solanum dulcamara* L.**

#### **Bittersweet**

Native. Widespread. Stable. Ponds, ditches, wet woods and swamps.

First record: Williams, c. 1800, 'moist hedges and sides of pits, common; var. with white flowers on Haghmon Hill.'

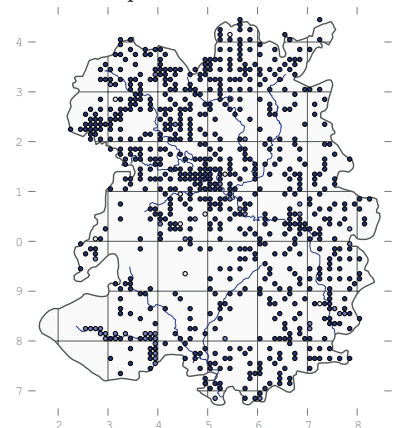
In a wide variety of wetland vegetation types, largely restricted to the lowlands. It is recorded in A10 *Persicaria amphibia* at Berrington Pool; OV26 *Epilobium hirsutum* at Betton Pool and Berrington Pool; OV30 *Bidens tripartita* at Marton Pool, Chirbury, Newton Mere and White Mere (all M.J. Wigginton, 1979).

It is sometimes recorded in mires, specifically M22 *Juncus subnodulosus* at Crose Mere (Wigginton, 1979); M23 *Juncus effusus* at Newton Mere and Oxon Pool; and M27 *Filipendula ulmaria* at the Mere at Ellesmere.

It is almost ubiquitous in swamps such as S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S4 *Phragmites australis* at Sweat Mere (Wigginton, 1979); S6 *Carex riparia* at Blake Mere (Wigginton, 1979) and Fenemere; S7 *C. acutiformis* in the Old River Bed; S9 *C. rostrata* at Berrington Pool (Wigginton, 1979); S10 *Equisetum fluviatile* in the Old River Bed; S11 *C. vesicaria* in the Long Bog; S12 *Typha latifolia* at Brownheath Moss, Shrawardine Pool and elsewhere; S14 *Sparganium erectum* by the Severn at Buildwas (Trueman, 1981), Kettle Mere and other meres; S17 *C. pseudocyperus* at Oxon and Shrawardine pools; S18 *C. otrubae* at the Speller; S24 *Calamagrostis canescens* at Fenemere and Oss Mere; S26 *Phragmites australis* around many meres; S27 *Comarum palustre* at Berrington Pool, Bomere Pool and elsewhere; and S28 *Phalaris arundinacea* at the Mere at Ellesmere.

In woods it is known in W1 *Salix cinerea* at Berrington Pool, Shomere Pool and the Mere; W4 *Betula pubescens* on Haughmond Hill and Lin Can Moss; in all stands of W5 and W6 *Salix* × *fragilis* woodland; W7 *Lysimachia nemorum* in Limekiln Wood (Trueman, 1981); W8 *Fraxinus excelsior* at Blodwel Rock, Redhill Coppice (both Trueman, 1981) and Whitwell Coppice; W10 *Quercus robur* at Shrawardine Pool and Oss Mere; and W24 *Rubus fruticosus* scrub on waste ground in Ironbridge (Trueman, 1981).

It is almost entirely lowland, being absent from the Stiperstones and Long Mynd, the upper parts of the Clun Forest and from Brown Clee and Titterstone Clee above about 250 m. One of the best places to see it is at Brown Moss (first recorded here by Sinker in 1961), where it occurs in most of the pools and in wet woodland.



### ***Solanum tuberosum* L.**

#### **Potato**

Occasional as a casual or crop volunteer throughout the county; never persisting.

### ***Solanum lycopersicum* L.**

#### **Tomato**

Neophyte. Scattered.

Occasional as a casual on riverbanks and waste ground throughout; not persisting. First recorded by Perring on Atcham Eyot in 1975.

### ***Solanum laciniatum* Aiton**

#### **Kangaroo-apple**

Neophyte. Rare.

One plant in a hedge by the A41 at Cosford (SJ805053, R.M. Stokes, 2005).

## Vascular plants

### *Nicotiana tabacum* L.

#### Tobacco

Neophyte. Rare.

As a casual on dumped topsoil at Lower Broughton Farm in 2000 (D.L. Buckingham) and Hortonwood in 2003 (R.M. Stokes).

### *Petunia × hybrida* (Hook.) P.L. Vilm. (*axillaris* × *integrifolia*)

#### Petunia

Neophyte. Rare.

In the pavement on Church Street, Oswestry, in 1999 (R.A. Dawes).

## Oleaceae

### *Forsythia suspensa* (Thunb.) Vahl

#### Golden-bell

Naturalised in scrub on Lawrence's Hill (SJ639094, R.M. Stokes, 1996).

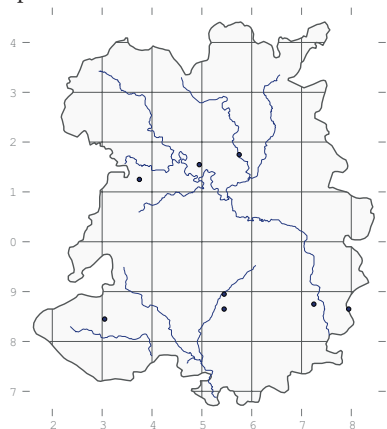
### *Forsythia × intermedia* Zabel (*suspensa* × *viridissima*)

#### Forsythia

Neophyte. Scattered. Increasing.  
Gardens.

First record: R.M. Stokes, 1996, 'naturalised in scrub alongside the Old River Bed at Greenfields.'

A common garden plant, occasionally found as a throw-out or planted on roadsides. There are recent records for Acton and Lindridge (both M.S. Duffell, 2008), Broadstone near Munslow, Broncroft, Chelmarsh church (J.A. Thompson, 2005), Poynton and Rowton Castle. It does not seem to spread into the wild.



### *Fraxinus excelsior* L.

#### Ash

Native. Widespread. Increasing.  
Woods, hedges, quarries, scrub and waste ground.

First record: Williams, c. 1800, 'common.'

Ash is the characteristic and dominant tree in the natural climax communities on calcareous soils throughout the county. It is of course abundant in the three types of ash woodland: W7 *Lysimachia nemorum* at Birchen Park, Brook Vessons, Fastings Coppice and Limekiln Wood (Trueman, 1981); W8 throughout the county, most notably on Wenlock Edge, Benthall Edge and Llynclys Hill; and W9 very rarely, possibly only at Betchcott Hollow on the Long Mynd. It is present in most stands of W5 and W6 *Salix × fragilis* woodland on drier patches of land or as an epiphyte, and it is frequent in W10 *Quercus robur* woodland, as at Haughmond Abbey or Snailbeach Coppice, where it can be co-dominant. It is usually present in W21 *Crataegus monogyna* and W24 *Rubus fruticosus* scrub and hedges, where it pushes these transitional communities towards woodland.

Seedlings of ash are common in grassland, and it has been found in CG2 *Avenula pubescens* at Blackbridge Quarry, Craig-llwyn Quarry and Pant roadside verge (Trueman, 1981); CG3 *Bromopsis erecta* at Ballstone Quarry; CG7 *Thymus polytrichus* at Farley and Nantmawr quarries; MG1 *Arrhenatherum elatius* at Redhill; MG5 *Festuca rubra* on Llynclys Hill, Burnt House and Tana Leas Farm (the last two by Wrench, 1995); MG10 *Holcus lanatus* rush-pasture at Brown's Corner; U1 *Rumex acetosella* on Earl's Hill; and U4 *Agrostis capillaris* on Westcott Hill (the last three by Trueman, 1981). It does less well in wetlands, but there are records of it in M10 *Carex dioica* at Shirlett Gutter (Trueman, 1980), M13 *Palustriella commutata* at Trefonen Marshes, and S27 *Comarum palustre* at The Moors, Ellesmere.

It is probably commoner now than for the last few centuries due to the spread of woodland and scrub, but much less abundant than in the distant past. In most places it has not yet been ousted by sycamore, as Sinker (1985, p. 245) predicted, but it has benefited from the demise of elm in many woods.

### *Fraxinus ornus* L.

#### Manna Ash

Neophyte. Rare. Parks and roadsides.

Recorded by J.C. Melvill at Emstrey in 1923, 'Alien . A fine tree by the roadside' (*Record of Bare Facts* 33, 1924) and by E.R. Lloyd at Henlle Park in 1941, 'one tree, almost certainly planted' (det. H.A. Hyde, *RBF* 51, 1942). Both were undoubtedly planted, and it is not established in the wild.

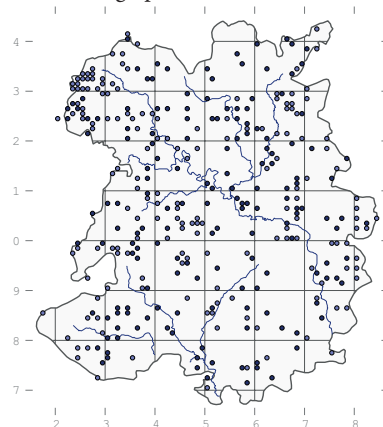
### *Syringa vulgaris* L.

#### Lilac

Neophyte. Widespread. Increasing.  
Hedges and gardens.

First record: H.F. Pendlebury, c. 1941, 'relics of gardens', Pontesford Hill (Leeke, 1944).

A common garden shrub, often planted in hedges near houses and occasionally in quite remote areas. It can persist long after gardens have disappeared, reproducing by suckering but not by seed. It is barely naturalised and never really wild. It does not seem to be restricted by altitude, and it is fairly common in hedges around Pennerley and the Bog up to about 400 m.



### *Ligustrum vulgare* L.

#### Wild Privet

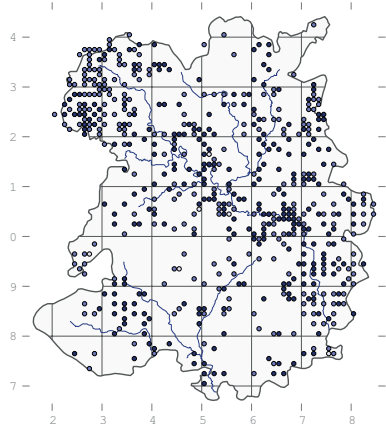
Native. Local. Stable. Woods, hedges and scrub.

First records: Williams, c. 1800, 'in hedge on the right hand side of the road Edgmond and Chetwynd; in hedge of a coppice on the left hand side of the turnpike road between Battlefield and Hadnall; and on Buildwas Abbey walls.'

Occasional in hedges, where it is often planted near to houses but also occurs as self-sown bushes in remote areas, and it spreads by suckering into field margins. It is also sometimes common in woods, especially on the more base-rich soils. One of the best woods for it is Laundry Terrace near Shrewsbury, but it is also common on Wenlock Edge, in



Coalbrookdale and on Llanymynech Hill. Some landowners have clearly planted it or encouraged its spread for pheasant cover. It tends to avoid the acid, upland soils but it is tolerant of peaty conditions in places like Calcott Moss, and at Blake Mere and Cole Mere it grows on the base-rich soil of the canal embankment. Most of its sites are in W8 *Fraxinus excelsior* woodland (e.g. Benthall Edge Wood) or its equivalent in hedges, with some being W10 *Quercus robur* woodland (e.g. Puleston Common) and, very occasionally, W4 *Betula pubescens* woodland (Calcott Moss).

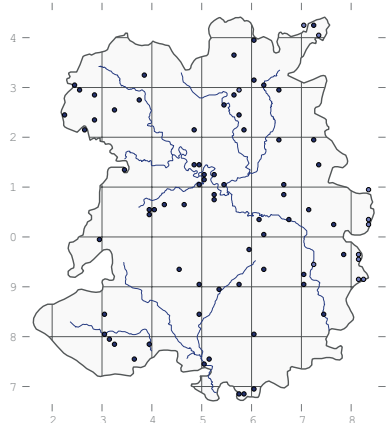


### *Ligustrum ovalifolium* Hassk.

#### Garden Privet

Neophyte. Widespread. Stable. Gardens.

Commonly planted in hedges around gardens and churchyards, never naturalised. Sometimes it occurs as a garden throw-out or is planted in woods (possibly having been mistaken for *L. vulgare*), for example, in Twemlows Big Wood. It does not spread by seed or even, usually, by suckering. The earliest record of it in the county is a specimen at SHY dated 1930, from Hawkstone (collector unknown) but it was simply ignored by earlier botanists as being clearly planted. Most recent records are from site surveys of churchyards or canals, where it would seem strange to simply ignore it.



### *Ligustrum lucidum* Aiton f.

#### Asian Privet

Planted, but spreading, in a thicket on the side of the Newport Canal (SJ749197, J. Fallows, 2000).

## Veronicaceae

### *Digitalis purpurea* L.

#### Foxglove

Native. Widespread. Stable. Scrub, grassland, woodland, heathland, hedges and gardens.

First record: Williams, c. 1800, 'upland pastures, ditch banks and heaths in a gravelly soil, common.'

Common under hedges and on steep, scrubby banks in patches of bare ground. It is recorded in M23 *Juncus effusus* at Upper Darnford (R. Tapper, 1983); OV24 *Urtica dioica* on Abbot's Castle Hill (Trueman, 2005); U1 *Rumex acetosella* in many places, including Earl's Hill and Haughmond Hill; and U2 *Deschampsia flexuosa* at Brown Moss.

In woodland and scrub it is found in W4 *Betula pubescens* at Lin Can Moss and Sweat Mere (Trueman, 1980); W5 *Alnus glutinosa* at Sweat Mere (Packham, 1970); W6 *Salix × fragilis* at Hencott Pool, Sweat Mere (Packham, 1970) and Brown Moss (achieving great abundance on the island in Pool 6 in 2003 when the trees were cleared); W8 *Fraxinus excelsior* at Oaks Wood and Wilderhope; W10 *Quercus robur* Bannister's Coppice, Snailbeach Coppice and elsewhere; W16 *Q. petraea* at Oaks Wood; W21 *Crataegus monogyna* on Earl's Hill; W23 *Ulex europaeus* at Old Oswestry; and W24 *Rubus fruticosus* hedgebanks on the roadside at Mellin-y-Groeg.

It is often grown in gardens as well. It has no altitudinal limit in the county, growing close to the summit of Titterstone Cleve at over 500 m (W.A. Thompson, 1981). White-flowered and 'monstrous' forms are often recorded.



### *Erinus alpinus* L.

#### Fairy Foxglove

In 1957 E.M. Rutter reported that 'the Rev E.P. Comber tells me that *Erinus alpinus* still grows on the walls of Uriconium and the Guardian there keeps a stock of it'; and in 1979 M. Wainwright and E.D. Pugh found it naturalised on a wall at Oakhurst, Oswestry (Watsonia 13).

### *Veronica officinalis* L.

#### Heath Speedwell

Native. Local. Stable. Axiophyte: upland grassland, heathland and open woods.

First record: Williams, c. 1800, 'common.'

On dry banks, hummocks or anthills situated within a variety of habitats, but usually indicating a low level of disturbance or agricultural intensity. Although normally on acid substrates, it grows in CG3 *Bromopsis erecta* at Lea Quarry and CG7 *Thymus polytrichus* in Lilleshall Quarry. The only heathland in which it is currently recorded is H8 *Ulex gallii* at Prees Heath, where it also occurs in U1 *Rumex acetosella* grassland, and at Squilver and on Titterstone Cleve it is recorded in U5 *Nardus stricta* (both Trueman, 1981). There are also many records of it in woodland such as W5 *Alnus glutinosa*

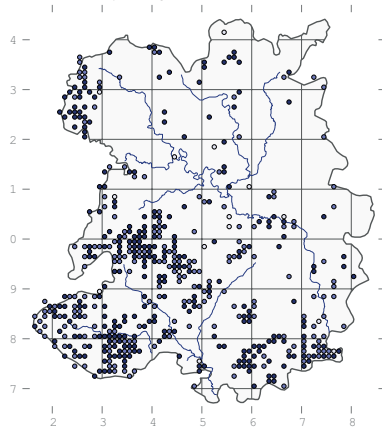


*Veronica scutellata* at Ruewood



*Veronica officinalis* (Dan Wrench)

at Millenheath; W8 *Fraxinus excelsior* at Stoke Wood and White Mere; W10 *Quercus robur* at Bannister's Coppice; W16 *Q. petraea* at Oaks Wood; and W23 *Ulex europaeus* scrub on Old Oswestry. A good place to look for it is on Haughmond Hill, where it was first recorded by Leighton in 1841.

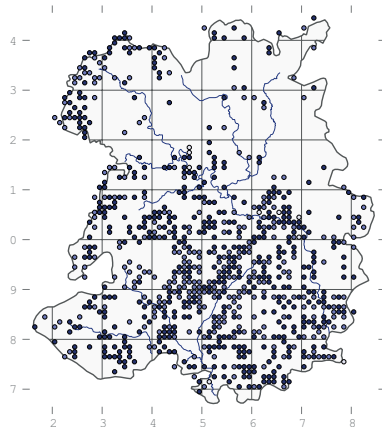


### *Veronica montana* L.

#### Wood Speedwell

Native. Local. Increasing. Axiphyte: woodland.

First record: Williams, c. 1800, 'ditch-banks about Madeley.'



Common in ancient woods, on hedge banks and in scrub and plantations which were formerly wooded, on neutral to calcareous soils. It is recorded mainly in W8 *Fraxinus excelsior* in places such as Llyncllys Hill, Wenlock Edge and Earl's Hill; less common in W10 *Quercus robur* at Bushmoor Coppice and Haughmond Hill; and it has been found in W6 *Salix × fragilis* at the Alders, Wollaston. It was one of the species that was found to have arrived at Attingham Park during the last 30 years (Whild & Lockton 2005), showing that it is capable of colonising maturing woodland over this timescale. This is reflected in the distribution map, which shows an increase since Sinker's Flora in the lowlands around Shrewsbury and Telford, where the amount of woodland has also been increasing in recent

decades. It is easy to find in the woods around Coalbrookdale, where it has been seen many times since Turner first recorded it in 1805.

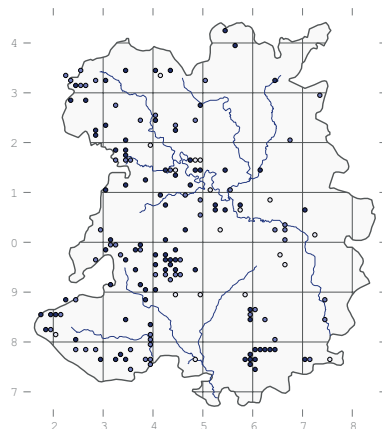
### *Veronica scutellata* L.

#### Marsh Speedwell

Native. Local. Stable. Axiphyte: marshes, upland flushes, shallow pools.

First record: Williams, c. 1800, 'by sides of pools.'

A perennial of seasonally inundated wetlands, mostly in the hills, but also by meres and in swamps along the valleys of the major rivers. At Morton Pool it is recorded in M22 *Juncus subnodulosus* fen-meadow (D.H. Wrench, 1991); at Brown Moss it grows in OV30 *Bidens tripartita* on the margin of a fluctuating pool; and in the Old River Bed it is found in S10 *Equisetum fluviatile* swamp. The var. *villosa* Schum. appears to be about as common as the glabrous form, and was first noted by Leighton (1841) at Bomere Pool and Blake Mere. Both varieties occur at Brown Moss, which is one of the most reliable sites for it.



### *Veronica beccabunga* L.

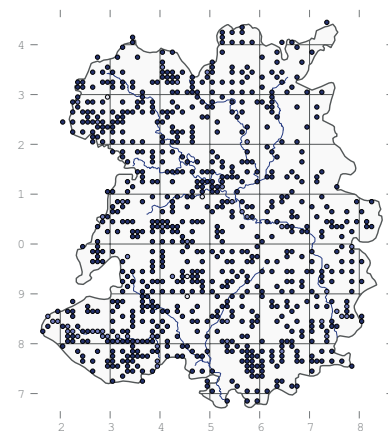
#### Brooklime

Native. Widespread. Stable. Ponds, rivers and streams.

First record: Williams, c. 1800, 'common.'

In a range of habitats from marshy grassland and wet woodland to upland flushes and the margins of the main rivers. It has a wide tolerance of light, pH and soil type but it is absent from acid habitats such as lowland bogs and upland moors such as the Stiperstones. At Crose Mere it grows in MG8 *Caltha palustris* grassland and, formerly, in M22 *Juncus subnodulosus* fen (M.J. Wigginton, 1979). On the edge of eutrophic waterbodies it is found in OV32 *Ranunculus sceleratus*, as at White Mere and by the River Roden at Tilley. It is perhaps most common in wet woodland, specifically W6 *Salix ×*

*fragilis*, and it has been recorded in this vegetation at Marton Pool at Chirbury, Cosford Wood, the Alders at Wollaston and in Holly Coppice on Haughmond Hill.



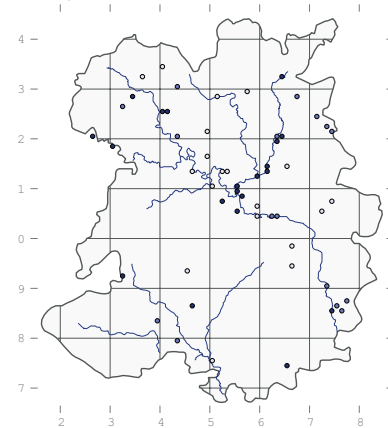
### *Veronica anagallis-aquatica* L.

#### Blue Water-speedwell

Native. Local. Stable. Axiphyte: lowland rivers.

First record: Williams, c. 1800, 'ditches and slow-running streams, not common.'

An annual of muddy, eutrophic lowland rivers and drainage ditches. The distribution pattern is clearer now than in Sinker's Flora, with a combination of new records and historical ones helping to fill out the maps. It occurs mainly along the Severn and the Tern, with some records for the Vyrnwy, Roden, Meese, Teme and Morda. A good place to look for it is along the Tern at Attingham Park.



### *Veronica catenata* Pennell

#### Pink Water-speedwell

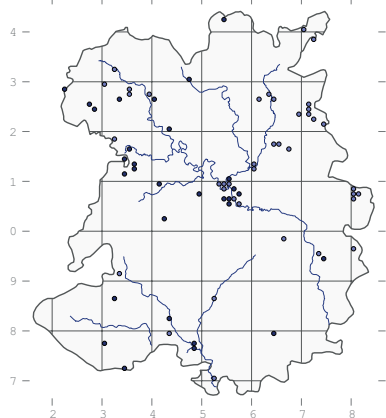
Native. Local. Stable. Axiphyte: rivers and pools.

First record: E.M. Rutter, 1955, 'Attingham Park: pond on right of drive between entrance and hall; and on the banks of the Tern just below the bridge.'

An annual of muddy water margins, it has similar habitat requirements to



the previous species, but it is possibly less a river plant and more typical of ponds. There are recent records for it in Condover Quarry (D.H. Wrench, 2004), a marsh at Donnington near Wroxeter (I. Diack, 2009), Llynclys Pool, in pools at Loppington Park and Loton Park, Lower Wigmore Clay Pits, Sweeny Fen (C. O'Reilly, 2007), Venus Pool and Walford Pool (P. Parker, 1993). Many of the early records are for rivers, however. E.M. Rutter found it in a pool at Attingham Park but also on the edge of the Tern; and he recorded it by the Worfe at Rindleford in 1956. It has also been seen by the Corfe at Broncroft (K.M. Saville, 1976), by the Meese in several places (B. Fowler, 1977), by the Strine Brook at Kynnersley (Perring, 1977), by the Teme at Ashford Carbonel (P.H. Waite, 1977) and by the Severn around Cound (Parker, 1981). Perring also found it on Atcham Eyot in 1975. It is curious that the old records tend to have it by rivers while the more recent ones do not.



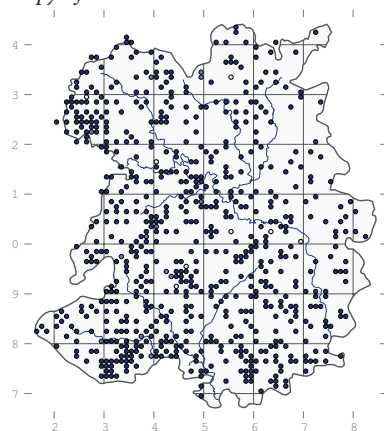
### *Veronica serpyllifolia* L. Thyme-leaved Speedwell

Native. Widespread. Stable. Grassland, paths, waste ground.

First record: Williams, c. 1800, 'common.'

On disturbed or trampled, usually damp or seasonally inundated ground in woods, pasture, gardens and alongside paths anywhere. Recorded in CG3 *Bromopsis erecta* at Lea Quarry; MG5 *Festuca rubra* at Cole Mere, Llanhowell (Trueman, 1981), Nant-y-mysells and Ruewood; MG10 *Holcus lanatus* in a field drain at Broncroft; M22 *Juncus subnodulosus* at Sweeny Fen; in an M35 *Montia fontana* at Boiling Well (Trueman, 1980); and at Prees Heath it occurs in U1 *Rumex acetosella* grassland. It often colonises bare ground, such as the OV10 *Senecio vulgaris* community it was growing in on an arable field margin at Lower Faintree, and OV21 *Plantago major* in a garden in Pant (Trueman, 1981). It

can also be tolerant of light shade, and it is recorded in W8 *Fraxinus excelsior* woodland at Haughmond Abbey and Llynclys Hill. All plants are ssp. *serpyllifolia*.



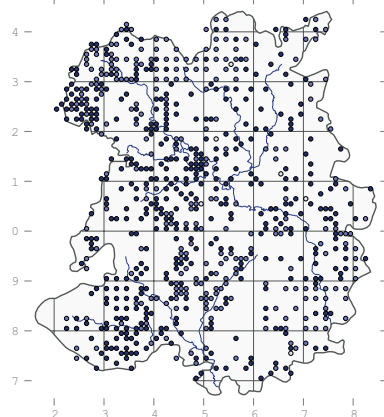
### *Veronica longifolia* L. Garden Speedwell

Only one record: on the cliff below Castle Walk, Bridgnorth, SO717927 (R.M. Stokes, 2001).

### *Veronica hederifolia* L. Ivy-leaved Speedwell

Native. Widespread. Stable. Woodland edge, hedges, gardens, arable fields, track sides.

First record: Williams, c. 1800, 'common.'



A spring annual, mainly found only in April and May. It grows in a variety of habitats, from arable field margins to shady woodland, and is recorded in MG1 *Arrhenatherum elatius* grassland on a road verge at Preston Montford (S.T. Geikie, 2008); OV13 *Capsella bursa-pastoris* on a roadside at Priorslee (Trueman, 1981); W6d *Sambucus nigra* by the river Worfe at Beckbury and by the Severn at Preston Rough and Shrewsbury Castle; W8 *Fraxinus excelsior* woods at Craig-llwyn; W21 *Crataegus monogyna* in a hedgebank by the Shrewsbury Canal at Uffington; and W24 *Rubus fruticosus* scrub at Chatwall and Stevenshill.

There are two subspecies: ssp. *hederifolia* is often the plant of open habitats whereas ssp. *lucorum* (Klett & Richt.) Hartl occurs in woods. Both were first recorded in 1970, when E.D. Pugh found them in her garden in Pant.

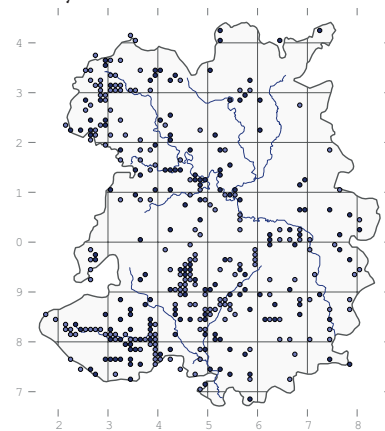
### *Veronica filiformis* Smith Slender Speedwell

Neophyte. Local. Increasing. Mown grassland.

First record: E.M. Rutter, 1955, 'banks of Ferry Lane, Shrawardine.'

Widely naturalised on mown road verges, in lawns, churchyards and gardens, sometimes by rivers or on damp ground, but not exclusively so. Although it is common throughout lowland Britain, it does not really spread into the wild and it is rare to find it at any great distance from a house. A typical habitat for it is in OV23 *Dactylis glomerata* amenity grassland at Shelton.

It started to spread in Britain the first half of the 20<sup>th</sup> century and was first reported in Shropshire in 1941, according to Sinker, but the earliest documented record we have is Rutter's. Good places to look for it are on the lawn at Attingham Park, where it was first recorded by Perring in 1972, or on the grassland surrounding Shrewsbury Abbey.



### *Veronica agrestis* L. Green Field-speedwell

Archaeophyte. Scattered. Decreasing. Arable fields, gardens, waste ground.

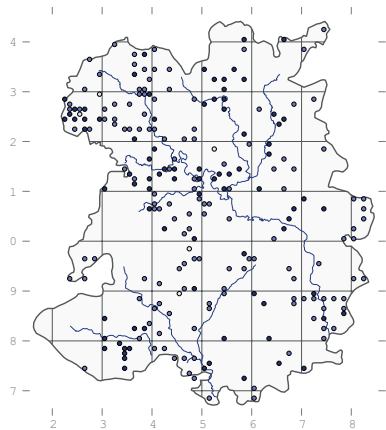
First record: Williams, c. 1800, 'common.'

Widely scattered on disturbed ground in a variety of habitats, not persisting for long in any site. It has been recorded in CG10 *Helianthemum nummularia* in Minton Batch (R. Tapper, 1983); OV10 *Senecio vulgaris* in an arable field at Welshampton (Trueman, 1981); and OV15 *Anagallis*



*arvensis* at Filletts Farm.

Williams and Leighton both considered it to be common, but even where it does occur now it is rarely present in any abundance. It was one of the species apparently lost from Attingham Park between 1975 and 2005 as arable land was converted to pasture. A good place to look for it is around Cardeston, where it has been recorded since 1988 (S. Stafford).



### *Veronica polita* Fries Grey Field-speedwell

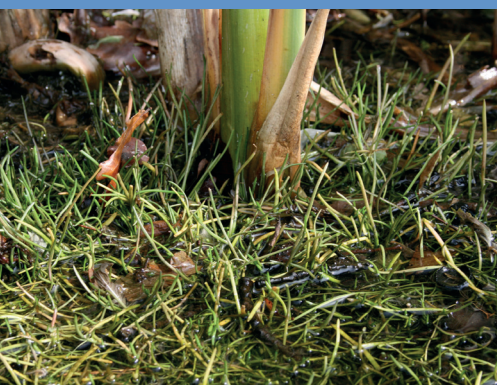
Neophyte. Scattered. Stable. Arable fields, gardens and waste ground.

First records: Leighton, 1841, 'cultivated land near Shrewsbury' and Halford, near Craven Arms.

A widespread but rarely abundant weed of arable fields and bare ground.

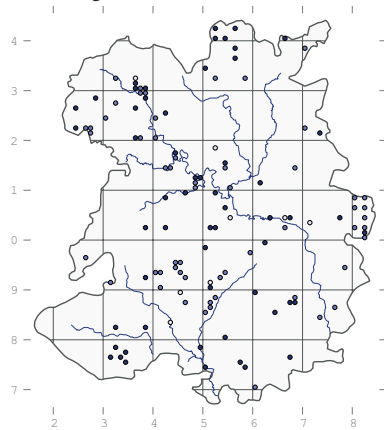


*Plantago coronopus* at Lyth Hill



*Littorella uniflora* at Newton Mere

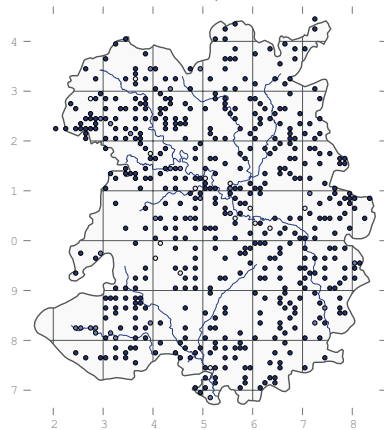
In 1981 W.A. Thompson recorded it on the margin of an arable field on heavy, clay soil at Woodhill, but it is more usually associated with light, sandy soils. It is almost as common now in gardens as in arable fields, but in 1880 Beckwith described it as 'often plentiful' in corn fields. Recent records seem to show a slight increase, but the change is well within the variability in recording levels.



### *Veronica persica* Poiret Common Field-speedwell

Neophyte. Widespread. Stable. Arable fields and waste ground.

First record (as *V. Buxbaumii*): T. Salwey, 1841, 'corn-field at Pen-y-lan'.



One of the commonest arable weeds, found on the margins of almost every ploughed field and often on roadsides, in gardens and on other disturbed soil. Although it is an annual it grows throughout the year. It has been recorded in CG3 *Bromopsis erecta* in Lea Quarry; OV10 *Senecio vulgaris* fields at Eudon George and waste ground at Shifnal (Trueman, 1981); OV13 *Capsella bursa-pastoris* on a road verge at Priorslee (Trueman, 1981) and in a rape field in Upton Cressett; OV14 *Urtica urens* at the Sands; OV15 *Anagallis arvensis* at Filletts Farm; OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1981); and OV23 *Dactylis glomerata* by roads at

Monkmoor and Shipley (Trueman, 1981).

Although there has been no obvious change in its range or abundance in recent decades, it was much rarer in the 19<sup>th</sup> century. It was first recorded in Britain in 1826 and Leighton only managed to get it (as *V. buxbaumii*) into the 'additions and corrections' section of his Flora. By 1881 it was still rare enough that W.E. Beckwith commented that he had only seen it once, at Eaton Constantine in 1877.

### *Veronica chamaedrys* L. Germander Speedwell

Native. Widespread. Stable. Hedgebanks, woodland edges, grassland.

First record: Williams, c. 1800, 'common.'

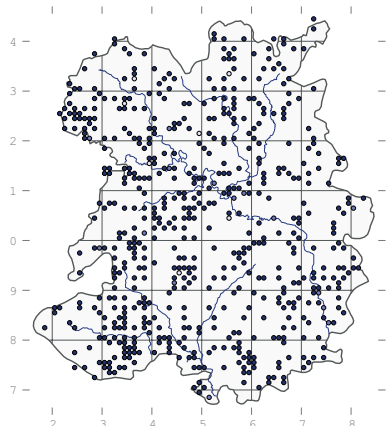
In a wide variety of grasslands, including CG2 *Avenula pubescens* at Craig Sychtyn, on a roadside verge at Pant, and at the Novers (the latter two by Trueman, 1981); CG7 *Thymus polytrichus* at Lilleshall Quarry; CG10 *Helianthemum nummularia* on Llyncllys Hill; MG1 *Arrhenatherum elatius* in many places, including Ropewalk Meadow and road verges everywhere; MG5 *Festuca rubra* meadows on Moelydd, Windmill Hill and elsewhere; MG8 *Caltha palustris* pasture at Morton Pool (D.H. Wrench, 1991); in resown OV23 *Dactylis glomerata* on a road embankment at Monkmoor; OV24 *Urtica dioica* in eroded grassland on Abbot's Castle Hill (Trueman, 2005); U1 *Rumex acetosella* on Abbot's Castle Hill (Trueman, 2005) and Rabbit Warren; and in U4 *Agrostis capillaris* grassland on a road verge at Cwm Collo and a pasture at Shelve (Trueman, 1981).

It also occurs in open woodland, being recorded in many W8 *Fraxinus excelsior* woods in places like Craig Sychtyn and Wenlock Edge; in W16 *Quercus petraea* at Oaks Wood (Trueman, 1981); in W23 *Ulex europaeus* scrub in a hedge at Mellin-y-Grogue and on Old Oswestry, and in W24 *Rubus fruticosus* hedgebanks at Pentre Hodre. One of the best places to look for it is on Earl's Hill, where it can be found in all stages of succession from old grassland through open scrub to mature woodland. In ancient woods it is usually replaced by *V. montana*, but it can often still be found along streams and rides where there is more sunlight.

***Veronica arvensis* L.****Wall Speedwell**

Native. Widespread. Stable. Arable fields and pasture, walls, waste ground.

First record: Williams, c. 1800, 'common.'



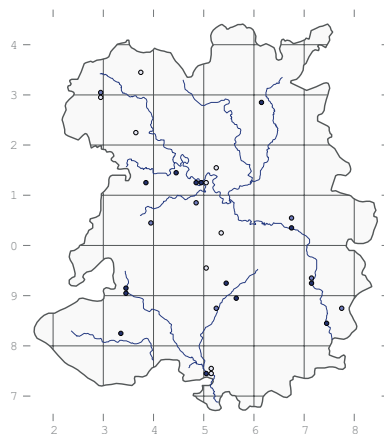
A common annual weed in spring and early summer, often found in small quantities around arable fields, in trampled grassland and on waste ground and roadsides. It often grows on bare ground and places such as walls where it has no obvious associates, but its main vegetation community is U1 *Rumex acetosella* in places such as Abbot's Castle Hill (Trueman, 2005), Attingham Park, Earl's Hill (A.K. Thorne, 2002), Haughmond Hill, Lyth Hill and Prees Heath. At Upton Cressett it grows in OV13 *Capsella bursa-pastoris* community in unsprayed arable headlands. As long as the ground is bare it does not seem to be restricted much by soil type, as it occurs on limestone spoil in Lea Quarry on Wenlock Edge and on dry peat at Hodnet Heath. A good place to look for it is Haughmond Abbey, where it grows in the mortar of the old walls (Trueman, 1984) and along the path in the nearby woods.

***Antirrhinum majus* L.****Snapdragon**

Neophyte. Scattered. Increasing. Walls, cliffs and railway lines.

First records: Williams, c. 1800, 'Shrewsbury walls; walls of Sundorn garden near Shrewsbury; Hardwick House near Ellesmere.'

Frequent on walls, rarely any distance from gardens and hence often ignored. It is particularly common in Shrewsbury and Ludlow, although in Bridgnorth it is as likely to be found on the sandstone cliffs (W.E. Hutton, 1977) and at Oswestry Station (M. Wainwright, 1980) and Woodside (J.O. Mountford, 1979) it is recorded on railway lines.

***Chaenorhinum organifolium* (L.) Kostel.****Malling Toadflax**

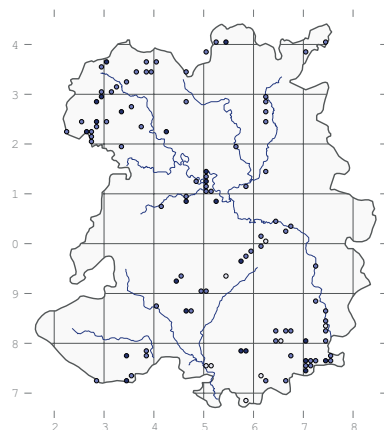
Naturalised on the pavement of Honeysuckle Row, Shrewsbury, in 2004 (J. Stone, det. Whild, BIRM).

***Chaenorhinum minus* (L.) Lange****Small Toadflax**

Archaeophyte. Local. Decreasing. Railways, roadsides, field margins.

First record: W.P. Brookes, 1834, Windmill Field, Wenlock (SHY).

Formerly more widespread as an arable weed on calcareous soils, but now rather rare. There are recent records for a patch of waste ground opposite the Queen's Head (R.M. Stokes, 2001), the Severn Valley Railway at Lower Betton (J. Ing, 2002), Hopton Titterhill (J. Clayfield, 2005), along a forestry track in Birchen Park (J. Bingham, 2006), Lilleshall Quarry (A.K. Thorne, 2006), the verge of the A5 at Rhoswel (B.J. Laney, 2008) and in Cleestanton (P.R. Green, 2009).



[*Misopates orontium* (L.) Raf., Weasel's-snout

Recorded by Mary McGhie at Ludlow (Leighton, 1841), by G.H. Griffiths (c. 1870) at Strefford and by B. Carleton & C.M. Howard in railway cuttings at Westbury

and Henbarns (CEH railway survey, 1979). None of these is good enough to stand as a first county record. W.B. Allen mentioned it being 'near Buildwas', in the Transactions of the Caradoc & Severn Valley Field Club for 1907, but the record was never published in the Record of Bare Facts. Sinker (1985) considered it not to occur in Shropshire.]

***Cymbalaria muralis* P.**

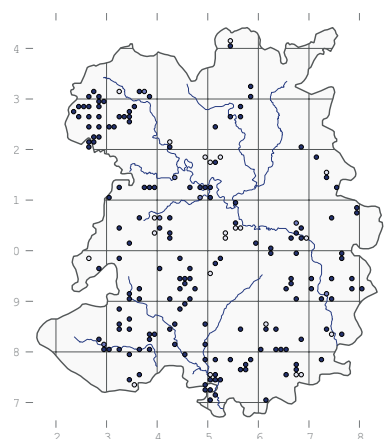
Gärtn., B. Mey. & Scherb.

**Ivy-leaved Toadflax**

Neophyte. Scattered. Increasing. Walls.

First record: R.H. Waring, 1794, The Hayes, Oswestry.

Widespread on walls, where it may often be planted but is clearly sometimes quite naturalised. Good places to see it include St Mary's Water Lane in Shrewsbury and St Peter's Church, Cound, where in both places it is still present 200 years after Williams recorded it. The first county record for The Hayes is from J.F.M. Dovaston (in Leighton 1841) who reported that Waring had introduced it there. Occasionally it is recorded on the ground, as in Sherifffhales churchyard and on waste ground opposite the Queen's Head (R.M. Stokes, 2001). It is particularly abundant in places such as the bridge over the Tern at Attingham or the walls of Aston Locks.

***Cymbalaria hepaticifolia* (Poiret) Wettst.****Corsican Toadflax**

A garden escape on a wall at Grinshill (SJ515238, T.F. Preece, 1994).



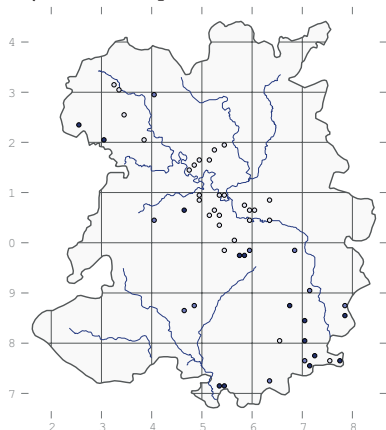
***Kickxia elatine* (L.) Dumort.****Sharp-leaved Fluellen**

Archaeophyte. Local. Stable.

Axiophyte: arable fields.

First records: Williams, c. 1800, 'corn-fields about Eaton Mascott, Berrington, etc in a clay soil.'

An annual weed of arable fields, often found late in the year after cereal crops are harvested, but also sometimes recorded in fields of hemp (at Maesbrook, A.K. Thorne, 2002), beans (at Caynham, B.J. Laney, 2007), Flax (at Bewdley, J. Martin, 1991) and even in pasture (at Milson, E. Heywood-Waddington, 1977). It also occurs on woodland rides in the Wyre Forest area, such as at Bell Coppice (J. Bingham, 1991), Sturt Common (Bingham, 1987), Birchen Park (Bingham, 2006) and Coachroad Coppice (M.C. Clark, 1976), and in disused limestone quarries such as Blodwel Quarry (A.K. Thorne, 2006), Lea Quarry and Lilleshall Quarry (R.M. Stokes, 1995). At Filletts Farm near Alveley it was growing in OV15 *Anagallis arvensis* in the stubble of a wheat field in autumn 2010 – a few plants amongst the crop but many more around the edges, which seems typical of its behaviour elsewhere. It is a lowland plant, growing up to about 250 m at Lilleshall Quarry. Sinkler (1985) considered it to have declined seriously during the 20<sup>th</sup> century, but it seems to have recovered since then and appears to be no less common than at any time in the past.

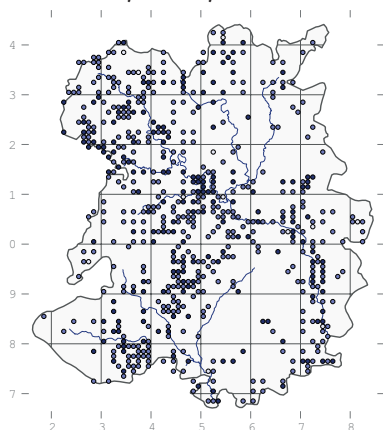
***Linaria vulgaris* Miller****Common Toadflax**

Native. Widespread. Decreasing. Grassland, field margins, river banks and railways.

First record: Williams, c. 1800, 'hedges, common.'

Typical of rough grassland by rivers or on roadsides, and sometimes frequent

on railway lines or waste ground. Trueman (1981) recorded it in OV25 *Cirsium arvense* community in a field margin at Norton, Stockton. Good places to see it include the banks of the Severn in the Quarry, Shrewsbury; beside the Montgomery Canal at Aston Locks; and almost anywhere along the Severn Valley Railway.

***Linaria × sepium* Allman  
(*vulgaris* × *repens*)**

Native. Rare. Stable. Railway lines and roadsides.

First record: G. Potts, conf. G.C. Druce, 1903, 'a railway bank near Presthope.'

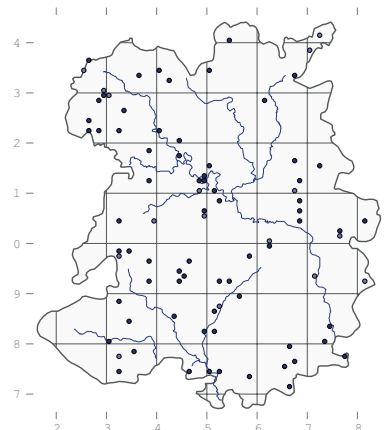
As a spontaneous hybrid between a native and a naturalised species, this plant is considered a native. It grows on dry, calcareous soils, often beside railways or on roadsides near gardens. The plants at Presthope had mostly gone by 1936 (Potts & A.A. Dallman) owing to the introduction of chemical weed killer by the railway company but the closing of the line led to its ultimate demise. It was subsequently found by W.A. Thompson on the Severn Valley Railway at Highley in 1979 and on the Newdale Railway at Ketley in 1982; H. Davidson also reported it from a roadside on Trevor Hill in Church Stretton in 1979. The only recent record is from the Cotton Hill sidings by R.M. Stokes in 1995. It may well be overlooked elsewhere.

***Linaria purpurea* (L.) Miller****Purple Toadflax**

Neophyte. Scattered. Increasing. Gardens, railways and waste ground.

First record: G.C. Druce, 1911, Bridgnorth.

Naturalised on disturbed ground and roadsides near houses, along railways such as at Cotton Hill sidings (R.M. Stokes, 1995) and on waste ground such as at Craignant Tower Quarry (M.E. Roberts, 1977), where it was later buried by rubble.

***Linaria × dominii* (*purpurea* × *repens*) Druce**

Neophyte. Rare. Local. Railways.

First record: E.D. Pugh, 1978, 'disused railway line north of Pant Station.'

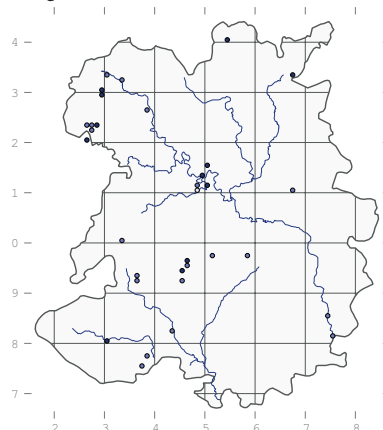
Occasional on railway lines, typically in towns where the parents occur. There are recent records for Newdale Railway (SJ674103, W.A. Thompson, conf. P.M. Benoit, 1982), Cotton Hill sidings (SJ492137, R.M. Stokes, 1998) and along the railway line at Harlescott (SJ506155, 1995). In 1980 M.B. Fuller reported a plant with 2 purple and 12 pink flowers in Munslow churchyard.

***Linaria repens* (L.) Miller****Pale Toadflax**

Archaeophyte. Scattered. Stable. Railways, roadsides, waste ground.

First record: G.C. Druce, 1903, Presthope.

Mostly on railway lines, with recent records for Cotton Hill sidings (R.M. Stokes, 1995), the main line at Harlescott, and the old railway station at Oswestry (R.A. Dawes, 2007). It eventually disappears from old lines, such as the one at Presthope (last seen there by G. Potts in 1931). There are some records of it on roadsides, as in Church Stretton (H.M. Davidson, 1979), and even one for a 'recently filled ditch' on Shrewsbury School's playing fields at Kingsland in 1960 (E.M. Rutter, SHY).





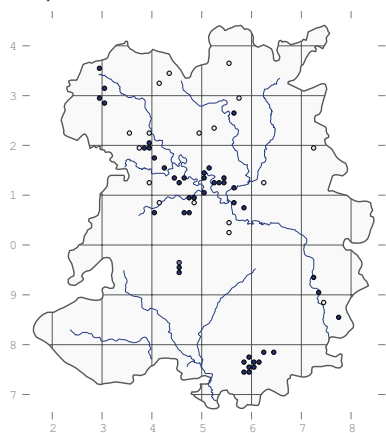
***Linaria maroccana* Hook.f.****Annual Toadflax**

Two plants on a roadside verge at Ashfields (SJ704263, B.R. Fowler, 1977) and from a seed mix at Beverley Roundabout, Oakengates (R.M. Stokes, 2002, BIRM).

**Plantaginaceae*****Plantago coronopus* L.****Buck's-horn Plantain**

Native. Local. Increasing. Axiophyte: grassland and roadsides.

First records: Williams, c. 1800, 'at the junction of three roads between Venus Bank and the paper mill in the parish of Cound; by the side of the road between Cardiston and Cross Gates; side of the road near Dudmaston; upon Haughmond Hill, near Downton; about Edgmond, etc.; Harmer Hill and by side of White Mere near Ellesmere; upon Cound Moor; the Morf near Bridgnorth; Bayston Hill near Salop.'



Occasional on U1 *Rumex acetosella* grassland in places such as Bayston Hill (D.H. Wrench, 2007), Bridgnorth Cemetery (Wrench, 2000), Charlton Hill, Haughmond Hill, Lyth Hill, Quatford (S. O'Donnell, 2006) and Titterstone Clee; and in OV22 *Taraxacum officinale* on ruins at Viroconium. It also colonises roadside verges as a halophyte and has been recorded by the A5 in Shrewsbury since 2004, and subsequently in many places by the M54 and A5 (B.J. Laney, 2008-9). Sinker (1985) had surprisingly few records of it and considered it to have been, historically, a plant of lowland heaths. It could more precisely have been described as a plant of U1 grass-heaths such as Prees Heath, where it was recorded by A.H. Wolley-Dod in 1900 and 1901 (ABS, HLU), and which were once more widespread in the lowlands. Now it is largely restricted to hills and roadsides. It has been recorded as high as 455 m on quarry spoil on Titterstone Clee

(SO597775, Trueman, 1981). It seems possible that it did go into decline in the late 20<sup>th</sup> century for some reason, but it is now increasing both on the hills and along roads.

***Plantago major* L.****Greater Plantain**

Native. Widespread. Stable. Grassland, lake margins and waste ground.

First record: Williams, c. 1800, 'pastures and footpaths, common.'



On waste ground, roadsides, paths, farm tracks and in a wide variety of habitats wherever there is some trampling and bare ground. It is not common in MG5 *Festuca rubra* grassland, having only been recorded at Stretton Westwood by D.H. Wrench in 1995, and in MG8 *Caltha palustris* grassland at Morton Pool (Wrench, 1991). At Brown Moss and Fenemere it grows in MG10 *Holcus lanatus* and M.J. Wigginton (1979) recorded it in M22 *Juncus subnodulosus* at Crose Mere and M23 *J. effusus* at Cole Mere, close to the margin of the meres where there tends to be plenty of bare substrate. Also on the edges of meres it is found in OV30 *Bidens tripartita* at Marton Pool, Chirbury, and White Mere (Wigginton, 1979), in OV31 *Rorippa palustris* vegetation at Brown Moss and Fenemere (Wigginton, 1979), and OV35 *Lythrum portula* vegetation at Brown Moss.

It is most common in dry open vegetation such as OV10 *Senecio vulgaris* on waste ground at Shifnal and arable fields at Welshampton; OV20 *Sagina procumbens* at Haughmond Abbey; OV22 *Taraxacum officinale* at Buildwas Sand Quarry (all Trueman, 1982); and OV25 *Cirsium arvense* in a field margin at Kingshead. It has also been recorded in OV28 *Agrostis stolonifera* along a ride in Withybed Wood (J. Bingham, 1986).

There is one record of it in U1 *Rumex acetosella* in a quarry on Titterstone

Clee and one of it in W8 *Fraxinus excelsior* scrub at Stokes's Barn (both Trueman, 1981). It is frequent at the bases of hedges such as a W24 *Rubus fruticosus* hedgebank at Pentre Hodre.

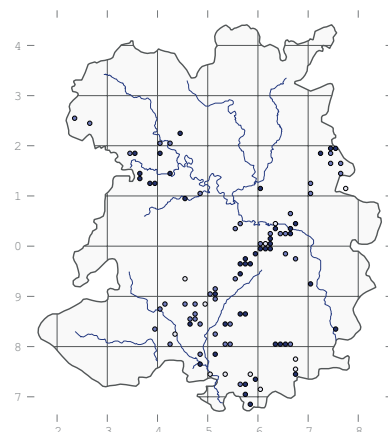
***Plantago media* L.****Hoary Plantain**

Native. Local. Stable. Axiophyte: calcareous grassland.

First records: Williams, c. 1800, Buildwas, Burford, Cleobury Mortimer, Farlow, Much Wenlock, Nash and Neen Savage.

In calcareous grassland on the Silurian Limestone of Wenlock Edge, and in base-rich grassland elsewhere, but not on the Carboniferous Limestone in the north-west, which is beyond its range in Britain. It has been recorded in CG2 *Avenula pubescens* at Ballstone Quarry, the Novers (Trueman, 1981) and Windmill Hill; CG3 *Bromopsis erecta* at Hilltop, Ippikin's Rock and Stokes's Barn (Trueman, 1981); MG1e *Centaurea nigra* on Windmill Hill; and MG5 *Festuca rubra* at Oreton, Benthall Hall (Trueman, 1981) and Wenlock Edge Car Park.

It is found in several churchyards, including Abdon (Bingham, 1997), Burford (S. O'Donnell, 1995), Chelmarsh (J.A. Thompson, 2005), Farlow (Thompson, 1998) and Whitton (Thompson, 1997); probably in MG5 at all these sites. It prefers sites with some bare ground but it is not particularly common in quarries, although it has been recorded at Cardeston (first by G.E. Johnson in 1910 and many times since), Lilleshall, Pattens Rock Quarry, Shadwell (N. Button, 2006) and The Quarry, Much Wenlock. It is not restricted by altitude in this county, but it is absent from the higher hills owing to the unfavourable soils.



## *Plantago lanceolata* L.

### Ribwort Plantain

Native. Widespread. Stable. Grassland and waste ground.

First record: Williams, c. 1800, 'meadows and pastures, common.'



A perennial of mesotrophic to calcareous grassland throughout the county, and a ready colonist of bare ground. In mown or trampled swards it usually forms low rosettes, whereas in meadows and on waste land it grows erect. It is recorded in all stands of CG2 *Avenula pubescens* and CG3 *Bromopsis erecta*, and in CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Llyncllys Hill. It is also in many stands of MG1, MG4, MG5, MG6, MG7 and MG8, but it is less common in MG9 *Deschampsia cespitosa* grassland, having been recorded only at Cole Mere and Hill Houses. Trueman found it in MG10 *Holcus lanatus* rush-pasture at Brown's Corner in 1981. It is ubiquitous in M22, but only in M23 *Juncus effusus* at Ruewood (P. Welsh, 1981). At Black Coppice it grows in M24 *Cirsium dissectum* and at Cole Mere it occurs in M27 *Filipendula ulmaria* mire. In upland grasslands it is less common, but it is recorded in U1 *Rumex acetosella* at Ketley (Trueman, 1981) and Prees Heath and in U4 *Agrostis capillaris* at Cwm Collo, Shelve and Westcott Hill (the latter two by Trueman, 1981).

It is not recorded in mature woodland, but it has been found in W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981) and in a W24 *Rubus fruticosus* hedgebank at Mellin-y-Grogue. One place where it is particularly abundant is in OV23 *Dactylis glomerata* on roadsides throughout the county, and it is sporadic in other open vegetation types such as OV31 *Rorippa palustris* community on the margin of Fenemere (M.J. Wigginton, 1979). It seems to be

particularly rare in swamps, but it has been found in S26 *Phragmites australis* swamp in a ditch at Cole Mere. It is not restricted by altitude and it is probably present in every monad in the county, so the map only shows recording effort.

## *Plantago arenaria* Waldst. & Kit.

### Branched Plantain

'Found on a stone heap at Hughley' by H.M. Auden in 1907 (*Record of Bare Facts* 17, 1908).

## *Littorella uniflora* (L.) Asch.

### Shoreweed

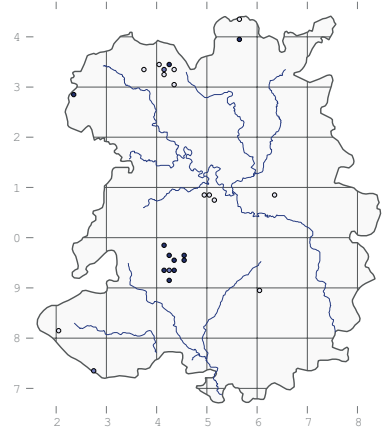
Native. Local. Stable. Axiophyte: lakes and pools.

First records (as *Littorella lacustris*): Williams, c. 1800, 'in Bomere and Betton pools; a pool on the Perth Common near Ellesmere; in Croesmere, Whitemere, Ellesmere mere; Colmere. A variety with hairy leaves in Bomere pool.'

A perennial of mesotrophic to oligotrophic meres and pools, usually in shallow water around the margins, where it grows upwards in rosettes, or on the sandy margins of the drawdown zone, where the leaves are typically pressed flat against the ground. At Brown Moss it occurs only on the margin of Pool 6, usually in OV31 *Rorippa palustris* and OV35 *Lythrum portula* vegetation; rarely submerged. At Newton Mere, by contrast, it is abundant around the edges in its aquatic form, in A22 *L. uniflora* swards and S12 *Typha latifolia* swamp, and it is only occasional in OV35 on the shore. At Llyn Rhuddwyn it also grows in OV35 (Trueman, 1984).

The upland populations were first recorded by J.A. Panter at Bettws-y-Crwyn in 1903. On the Long Mynd it was found by J. Roper in a flush in Ashes Hollow in 1983, and it has since been found in numerous places, including Middlehill Pool (J. Bingham, 1984), Wild Moor (J.A. Lister, 1985), Pole Cottage Pools (S. Kingsbury, 1990), pools at the top of Callow Hollow, Threshold Pools and pools above Gogbatch (all A.K. Thorne, 1999), Townbrook Hollow and Long Batch (both M. Cousins, 2001) and Novers Hill (J. Clayfield, 2007). These populations seem mostly to be transient. Other upland sites where it has been recorded include Ditton Priors (W. Beacall, 1904) and The Wrekin (W. Phillips, <1905). In 1962 G.P. Richards recorded it by the River Teme at Nether Skyborry.

Because these upland plants add many dots to the map, the overall population in the county appears to be stable or even increasing, but it was once present in many meres, and there is a long term decline in the lowlands. The highest altitude for it in the county was at Pole Cottage Pools, c. 480 m (SO412938, S. & P.D. Kingsbury, 1990) although it has not been seen there recently.



## Hippuridaceae

## *Hippuris vulgaris* L.

### Mare's-tail

Native. Rare. Decreasing. Ponds and ditches and flushes.

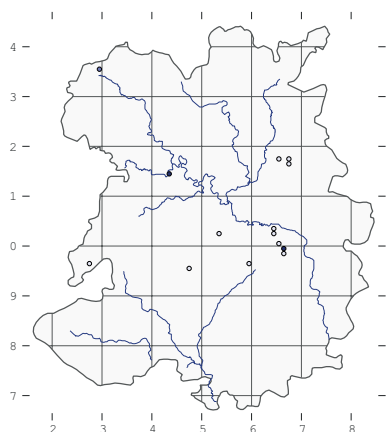
First record: Williams, c. 1800, 'Ditch on the right-hand side of the road between Kinnersley and Buttery.'

A perennial of calcareous waterbodies, mostly in eastern Britain. The only current site for it is at Willey Ponds (SO668986, D.H. Wrench, 2014), where it was first recorded by W. Phillips in 1893. It may also still be at Moreton Hall, where it was recorded by M. Wainwright in 1982, and it is doubtless introduced in some garden ponds, as it is at Preston Montford.

The early records are all from the Weald Moors, where H. Bidwell (1841), R. Anslow (1865) and W. Phillips (1880) all saw it after Williams had discovered it there. This is possibly its only native habitat, but it has been recorded (without, unfortunately, a specimen) in Colliersford Gutter by G.H. Griffiths in c. 1870, and between Caer Caradoc and the Lawley by R.M. Serjeantson (in Hamilton, 1909). It can occur in flushes, so either of these could be correct, and Serjeantson was generally very reliable.

Other possible introduction sites include Marrington (A.R. Horwood, 1901), Barrow (W.B. Allen, 1902), Tickwood (Allen, 1903), Acton Burnell and Bourton (both Serjeantson, 1909).





## Callitrichaceae

### *Callitriche hermaphroditica* L.

#### Annual Water-starwort

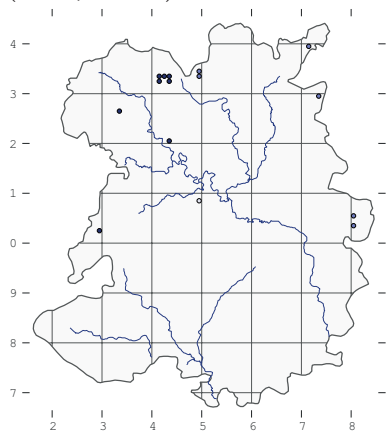
Native. Rare. Decreasing. Axiophyte: mesotrophic lakes and canals.

First record: Leighton, 1837, pit near Sharpstones Hill (det. R.D. Meikle, E & K).

In some abundance at Cole Mere, where it was first recorded by Sinker in 1958, and White Mere (Perring, 1975). It occurs in shallow water in full sunlight, and it seems to favour the parts of the shoreline kept open by the yachting clubs at those sites.

In the past it has been recorded in ponds at Albrighton (SJ802052 and SJ807037, B.R. Fowler, 1976-77) and Cheswardine Marsh (SJ730298, Fowler, 1976); at Marton Pool, Chirbury (C. Walker, 1988); in the Tern at Bearstone (SJ717391, Fowler, 1977); and at Walford Pool (P. Parker, 1990).

There are also records of it in several canals, such as the Llangollen at Blake Mere (Sinker, 1958); in various parts of the Montgomery (J. Alder, 1985 – R. Stokes, 1996), and the Prees Branch (Sinker, 1966-67).



### *Callitriche stagnalis* Scop.

#### Common Water-starwort

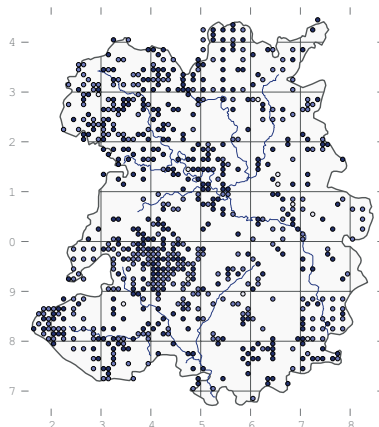
Native. Widespread. Stable. Ponds, rivers, ditches, rutted tracks.

First records (as *C. verna*): Leighton, 1833, 'Almond Park' and Bomere Pool (both CGE).

By far the most common water-starwort in the county, in a wide range of habitats. It was recorded in A3 *Hydrocharis morsus-ranae* community in the Newport Canal by Trueman in 1981, and it undoubtedly occurs in many other aquatic habitats, but these are rarely classified. It has also been found on bare mud in M23 *Juncus effusus* on the margins of Cole Mere (M.J. Wigginton, 1979) and Ebnal Pool (Trueman, 1981); OV30 *Bidens tripartita* at Newton Mere (Wigginton, 1979); OV31 *Rorippa palustris* at Venus Pool; and OV35 *Lythrum portula* at Newton Mere.

It is also found in taller swamp vegetation, including S6 *Carex riparia* at Blake Mere (Wigginton, 1979); S9 *C. rostrata* at Wildmoor Pool (Trueman, 1981); S12 *Typha latifolia* at Brown Moss; and S14 *Sparganium erectum* swamp at Berrington Pool, Betton Pool (Wigginton, 1979), Kettle Mere and Old Oswestry (Trueman, 1981).

In woods, it has been recorded in W1 *Salix cinerea* at Calcott Moss, in W5 *Alnus glutinosa* at Cole Mere, Sweat Mere, Haughmond Abbey and Top Pool; and in drier W6 *Salix × fragilis* at Cole Mere. It is also common in drier woodland types, but usually only along paths and rides, where it often grows in ruts. It is not restricted by altitude, occurring high on the Cleve Hills and the Stiperstones where there is suitable habitat. Good places to look for it include Bomere Pool, where it has been recorded regularly since 1833 (Leighton) and Hope Bowdler Hill, where it was first recorded by W.H. Painter in 1897.



### *Callitriche platycarpa* Kütz.

#### Various-leaved Water-starwort

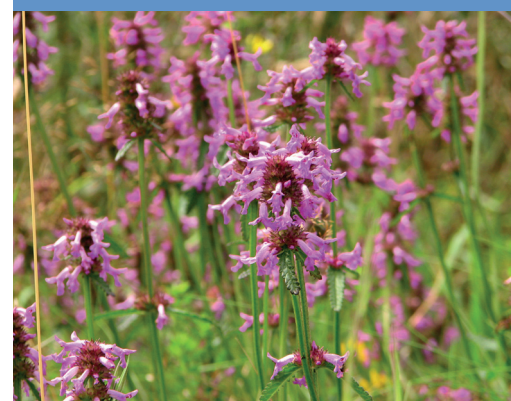
Native. Scattered. Stable. Rivers, streams, lakes, ponds and ditches.

First records: Leighton, 1841, near Preston Gubbals, Oaks Hall and Sharpstones Hill.

Closely related to *C. stagnalis* and sometimes difficult to separate from it. Most of the records included here have been determined from fruiting specimens by R.V. Lansdown or Whild. It is considered (Lansdown, 2008) to be less common on exposed mud and more tolerant of eutrophication, but often mistaken for *C. stagnalis* and possibly commoner than it. Trueman (1981) recorded it in M35 *Montia fontana* at Boiling Well, and it is generally rare in upland situations, but it has also been collected from a stream on Clee Liberty at 435 m (M.B. Fuller, det. Trueman, 1977). In 2003 it was frequent around the margins of Shrawardine Pool in S12 *Typha latifolia* and S17 *Carex pseudocyperus* swamps, and in W5 and W6 *Salix × fragilis* woodlands. At Lin Can Moss it occurs in W4 *Betula pubescens* woodland, which is certainly not eutrophic. A similar site is Clarepool Moss, where it has been recorded by E.M. Rutter in 1962 (det. Perring, SHY) and more recently in 2003. It is frequent in



*Limosella aquatica*

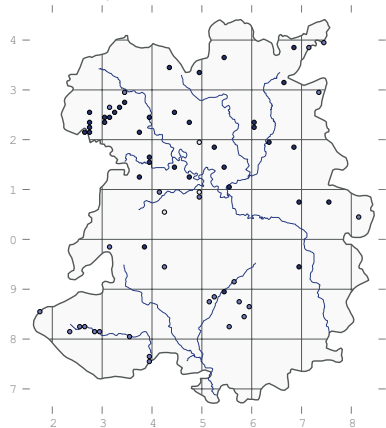


*Betonica officinalis* (Dan Wrench)



## Vascular plants

several rivers, most notably the Clun (Whild *et al.* 1983) and the Tern, and it was throughout the Montgomery Canal (Lansdown, 1997) but it may have become a lot less common there since navigation was restored.

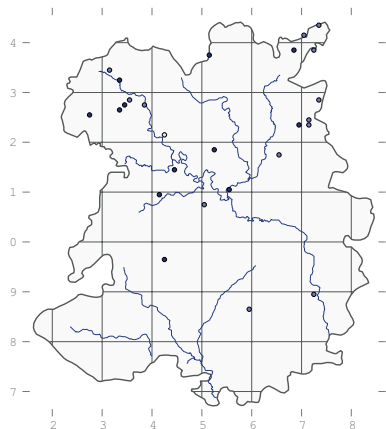


### *Callitriche obtusangula* Le Gall

#### Blunt-fruited Water-starwort

Native. Scattered. Stable. Canals, rivers, ponds.

First record: E.B. Benson, 1898, Baschurch (SHYB).



In base-rich waters, mostly in the lowlands but up to 535 m on Brown Clee (SO593866, M.B. Fuller, 1978, conf. Trueman). From the records that specify the habitat, it occurs about equally often in ponds (12 records), rivers and streams (8) and canals (8). Sometimes it is also found in ditches. In 1915 J.C. Melvill collected it in Bomere Wood and near Shomere, which are the only records of it in the Meres and Mosses. A good site for it is the River Meese, where it was recorded by B.R. Fowler at Deepdale in 1977 and it was still present at Howle in 2009. It also grows in the Tern at Attingham Park. In the Montgomery Canal it was first recorded by C.G.A. Paskell in 1978, and was regularly seen until 1998, but there are no records of it since navigation was restored. Although it is a distinctive plant and relatively easily identified when fruiting, all of the

records in the last twenty years are by just four people. There is no evidence of any change in its distribution.

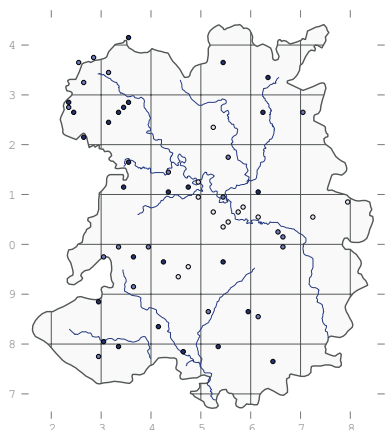
### *Callitriche brutia* Petagna

#### Intermediate Water-starwort

Native. Scattered. Stable. Ponds, canals, lakes.

First record: Leighton, 1837, near Sharpstones Hill (det. R.D. Meikle as *C. hamulata* s.l., E).

A variable species that was formerly divided into several taxa. It has a broad ecological range, and it is the species most likely to be found in upland and acidic waters. Trueman (1981) recorded it in OV35 *Lythrum portula* vegetation in Llyn Rhuddwyn, where Perring (1989) also found it to be abundant along the shoreline. It grows as high as 510 m on Brown Clee (SO59678668, 2004) but also in lowland (80 m), base-rich waters such as the Montgomery Canal at Aston Locks (R.V. Lansdown, 1998). On the Stiperstones it occurs in flushes below Cranberry Rock at 445 m. The only record of it in a river is by M. Wainwright from the Ceiriog at Pont-faen Bridge in 1981. Most of sites, however, are nondescript ponds such as a cattle-poached hollow at Dee Side, a reservoir on Smythemoor, and hollows along the bridleway through Tunstall Wood.



## Scrophulariaceae

### *Verbascum blattaria* L.

#### Moth Mullein

Neophyte. Rare. Casual. Gardens, roadsides, waste ground.

First record: L. Brown, 1726, 'without ye walls of Ludlow Castle.'

A garden escape, sometimes found in the wild but not persisting. Most of the records are for roadsides or waste ground near houses, but Beckwith (1881) considered it to be 'quite wild' in the villages of Eyton on Severn and Leighton. There are a couple of records

of it on hills, specifically one near Kenley Common (T. Butler, 1880) and Haughmond Hill (Williams, 1800 and F. Dickinson, 1900) and one of it in a field margin near Church Stretton (T. Bodenham, 1841). The only record in Sinker's Flora was from a garden near Church Stretton (H.M. Davidson, 1979), and the next most recent one was of a single garden escape at Tickwood Hall in 1927 (Mrs Heywood).

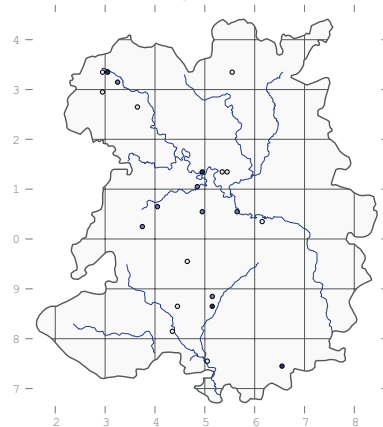
### *Verbascum virgatum* Stokes

#### Twiggy Mullein

Neophyte. Scarce. Casual. Gardens, roadsides, railway lines.

First record: J. Babington, 1803, 'by the side of the road... to Shrewsbury, about 11 miles from Ludlow.'

A garden escape, sometimes becoming naturalised for a short while. In the 1920s J.C. Melvill recorded it as established on waste ground at Meole Hall for a decade or so. It sometimes turns up on railway lines, as on the old Severn Valley Railway at Cound (P. Parker, 1975) or the sidings at Coton Hill (R.M. Stokes, 1994). Elsewhere it is often recorded on road verges as at Pontesford Garage (Sinker, 1963) and Gobowen (R.A. Dawes, 1995). There is no evidence that it is changing in abundance or range.



### *Verbascum phlomoides* L.

#### Orange Mullein

Neophyte. Rare.

A few plants on the roadside between Ironbridge and Broseley, SJ678034 (R.M. Stokes, 1998, BIRM).

### *Verbascum densiflorum* Bertol.

Dense-flowered Mullein

Neophyte. Rare.

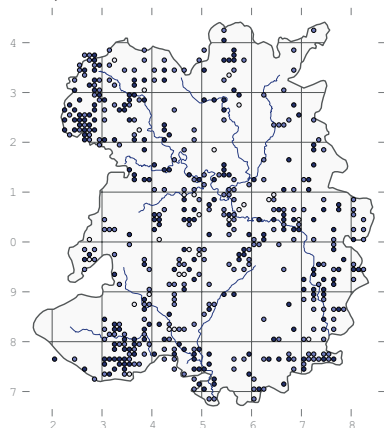
On a roadside at Westoncommon, SJ426264 (P. Parker, 1998).

***Verbascum thapsus* L.****Great Mullein**

Native. Widespread. Stable. Grassland, hedgebanks, quarries, waste ground.

First record: Williams, c. 1800, 'pastures and ditch banks, common.'

On bare ground or disturbed soil such as U1 *Rumex acetosella* grassland at Earl's Hill and Prees Heath or OV23 *Dactylis glomerata* on a road verge at Shipley (Trueman, 1981). Also in quarries such as Butcher's Quarry on Llynclys Hill and Haughmond Quarry, where it can be found on otherwise completely bare ground. Generally lowland, but up to about 415 m at Horseditch (SO592772, D.H. Wrench, 1994).

***Verbascum × godronii***

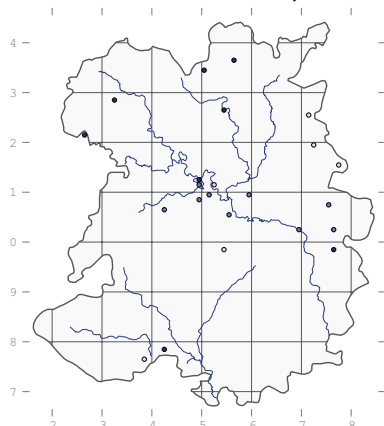
Boreau (*pulverulentum* × *thapsus*)

Twelve plants on a rocky slope on Earl's Hill (SJ409047, B.R. Fowler, 1980).

***Verbascum nigrum* L.****Dark Mullein**

Native. Scattered. Stable. Roadsides, railways, grassland and waste ground.

First record: A Student in Physick, 1727, 'road between The Heath and Jay.'



A native plant in SE England and little more than a casual in this county. It is typical of roadsides and railways, as on the tracks of Shrewsbury Station in

2010. There are recent records of it as spontaneous in a garden in Pant (H. Webster, 1992), by the Severn at Shrewsbury Castle, in a clearing in Twemlows Big Wood and at Brandhill.

***Verbascum speciosum***

Schrad.

**Hungarian Mullein**

Neophyte. Rare.

One plant in an open area at Gleedon Quarry (SJ625013, R.M. Stokes, 2010).

***Verbascum lychnitis* L.****White Mullein**

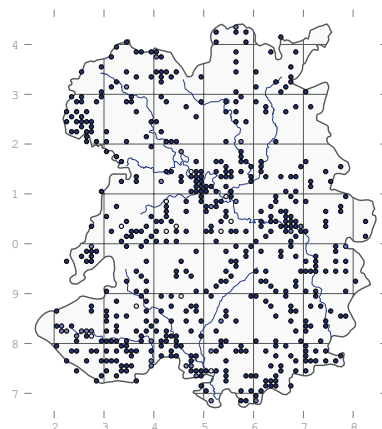
Native. Rare. Casual. Waste places.

Only ever as a casual or garden escape. The only recent record is for a roadside in Aston Munslow (SO512867, N. Sturt, 1997). Older records include Downton Hall (H. Spare, 1841), near Snow Pool (R.M. Serjeantson, 1880), near the Wrekin (W.E. Beckwith, 1880), Charlton Hill (Serjeantson, 1883), Wyre Forest (J.B. Duncan, 1901), Pulverbatch and Much Wenlock (both R.D. Benson, <1904).

***Scrophularia nodosa* L.****Common Figwort**

Native. Widespread. Stable. Woods, riverbanks, tall herb.

First record: Williams, c. 1800, 'hedges between Berwick and Atcham.'



In neutral to calcareous woods, including W5 *Alnus glutinosa* at Oxon Pool, W6d *Sambucus nigra* at Shelton Rough, and W8 *Fraxinus excelsior* in many places. Although widespread, it is rarely found in any abundance and it usually occurs as scattered patches of a few plants along track sides, in clearings and by streams. It often occurs outside woods, usually in semi-shaded places such as hedgerows and patches of scrub, especially along river banks and railway lines. Although it is a lowland plant, it is restricted

more by habitat than by altitude in Shropshire, growing at altitudes up to about 370 m on the Stiperstones (SO378991, A. Hearle, 1988).

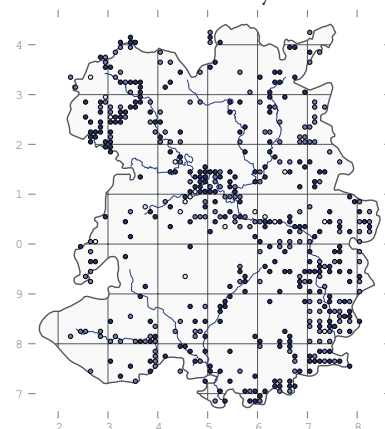
***Scrophularia auriculata* L.****Water Figwort**

Native. Local. Stable. Riverbanks, ditches and canals.

First record (as *S. aquatica*): Williams, c. 1800, 'sides of brooks and rills, plentifully.'

Largely restricted to the valleys of the major rivers, where it is found on river banks, especially along the Severn, where it grows anywhere from permanently inundated shelves on the edge of the water to dry field edges several metres above the summer water level.

It is recorded in OV26 *Epilobium hirsutum* tall-herb on a stream bank at Longford, by the Severn opposite Shrewsbury Castle and at Wollerton, and in W6 *Salix × fragilis* woodland in Loamhole Dingle and by the Severn at Shelton and in Shrewsbury.

***Scrophularia umbrosa***

Dumort.

**Green Figwort**

Native. Local. Stable. Axiophyte: ditches and pond margins.

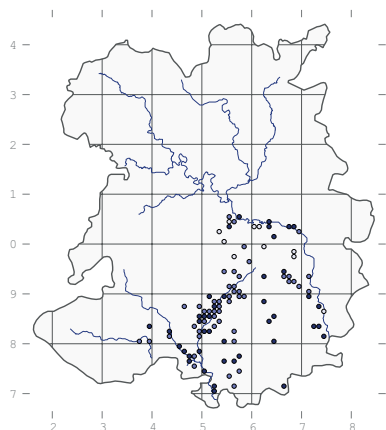
First record: C.C. Babington, 1873, 'Salop.'

Usually in ditches and on the side of small brooks, where it typically scrambles up tall herb vegetation and through hedges. It is restricted to certain river basins, where it grows in a variety of habitats. There are records of it in W8 *Fraxinus excelsior* woodland by the Borle Brook at New England and in S18 *Carex otrubae* swamp on the margin of a pond at the Speller.

It is recorded in the valleys of the Borle, Mor, Clun, Corve, Count, Onny, Severn, Teme, Seifton, Sheinton and Strand. Leighton (1841) was one of the first to recognise the difference

## Vascular plants

between *S. auriculata* and *C. umbrosa*, but he never found the latter in Shropshire. There is no obvious change in its distribution since Sinker's Flora. The best place for it in the county is possibly along a ditch and hedge near Little Sutton (SO514821), where it was abundant in 2010.



### *Scrophularia vernalis* L.

#### Yellow Figwort

Neophyte. Scarce. Decreasing. Walls, hedgebanks, gardens.

First record: Leighton, 1841, 'on a stone wall in a lane south of the house at Llanforda.'

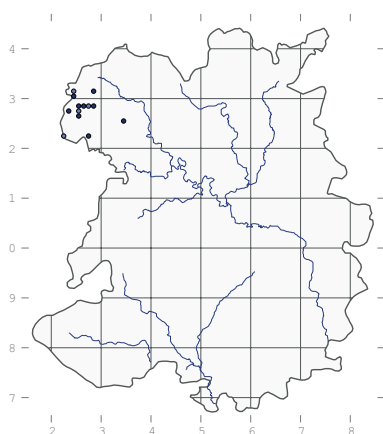
Occasional in the Oswestry district, where it was introduced several centuries ago, but it does not seem to spread and it may be decreasing.



*Lamium purpureum* (Dan Wrench)



*Scutellaria galericulata* (Dan Wrench)



### *Limosella aquatica* L.

#### Mudwort

Native. Rare. Stable. Axiphyte: rivers and ponds.

First record: J.J. Dillenius, 1726, 'about Shrewsbury.'

The only current site is Venus Pool (M. Lawley, 2006), where it grows in OV31 *Rorippa palustris* vegetation. Most records are from muddy banks by the Sever or from pools near the river. Leighton (1841) described it growing on 'sandy muddy margins' at Shelton Rough, where it was also found by E.M. Rutter in 1962 (SHY). Other places it has been recorded include 'pools about Buttonoak' (G. Jordan, c. 1871, WOS), a pool on Charlton Hill (Serjeantson & Beckwith, 1881, SHY) and Ledwyche Pool (C.M. & J.G. Dony, 1956, LTN). Populations are transient, and it clearly has the ability to colonise new sites, so there is no real evidence for a decline.

### *Buddleja davidii* Franchet

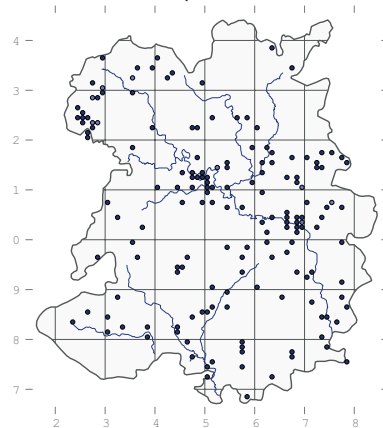
#### Butterfly-bush

Neophyte. Scattered. Increasing. Walls, railways, quarries and waste ground.

First record: M.J. Connell & D.M. Evans, 1972, 'waste ground, College Hill, Shrewsbury.'

Abundant in towns, where it often grows in inaccessible places such as high walls, sometimes causing damage to brickwork. In Shrewsbury it is frequent in OV20 *Sagina procumbens* on walls and pavements, although many seedlings presumably do not survive to maturity. Elsewhere it is recorded along railways in places like Oswestry Railway Station (E.D. Pugh, 1977) and by the Severn Valley Railway at Highley, in limestone quarries such as Llynclys (P. Parker, 1992) and Lea Quarry, and sandstone quarries such as Condober (D.H. Wrench, 1994). It is very common in gardens throughout

the county and is increasingly turning up in semi-natural situations nearby. For example, in Shrewsbury stands of it sometimes grow on the banks of the river when willows are cut down or the alders die back. The increase in its distribution and abundance since Sinker's Flora is considerable and is doubtless continuing. Lowland: up to 350 m at Pennerley.



## Lamiaceae

### *Stachys byzantina* K. Koch

#### Lamb's-ear

Neophyte. Scattered. Casual. Gardens and waste ground.

First record: J.H. Clarke & A.R. Franks, 1993, 'on limestone rocks in disused railway cutting at Pant.'

A common garden plant, occasionally found established from throw-outs. It has been recorded recently in the car park by the Montgomery Canal at Queen's Head, at Priorslee Flash (R.M. Stokes, 2005) and at Beggarhill Brook Farm.

### *Stachys sylvatica* L.

#### Hedge Woundwort

Native. Widespread. Stable. Hedges, river banks, woodland rides.

First record: Williams, c. 1800, 'hedges, common.'

In damp, slightly shady places such as woodland rides and under hedges. It is frequent in MG1 *Arrhenatherum elatius* grassland on roadsides throughout the county, and is probably most common in the MG1c *Filipendula ulmaria* subcommunity in places like the Speller. It is also recorded in M27 *F. ulmaria* in clearings in Tunstall Wood; OV26 *Epilobium hirsutum* by the River Duckow at Smythemoor, in the Old River Bed and along drainage ditches by the Tern at Wollerton; and OV28 *Ranunculus repens* on rides in Withybed Wood (J. Bingham, 1986).



It is frequent in a variety of woodland types, including W1 *Salix cinerea* around the edge of Berrington Pool; W5 *Alnus glutinosa* at Oss Mere; W6 *Salix* × *fragilis* at Hencott Pool and Holly Coppice; W7 *Lysimachia nemorum* at Birchen Park, Fastings Coppice and Upper Vessons; W8 *Fraxinus excelsior* woodland in many places; and W24 *Rubus fruticosus* scrub on a road verge at Abdon.

Martin Wigginton (1979) even recorded it in A8 *Nuphar lutea* community on the margin of Betton Pool, presumably after the water had risen above its normal level.



***Stachys* × *ambigua* Smith**  
(*sylvatica* × *palustris*)

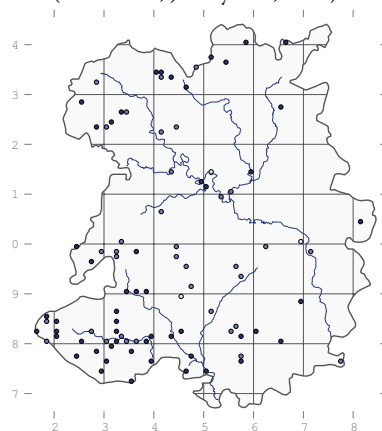
**Hybrid Woundwort**

Native. Scattered. Stable. River banks, ponds, canals and roadside ditches.

First record (as *S. palustris* var. *intermedia*): Leighton, 1841, 'sides of the Shrewsbury Canal, and Meole brook near Shrewsbury.'

A sterile hybrid which sometimes forms large stands in places where both parents are likely to occur, but often in the absence of one or both. It is fairly frequent alongside brooks in the foothills, such as along the Clun in many places, by the Teme at Lingon Bridge (J. Clayfield, 1998) and Ludlow, and in high valleys such as Cwm Cold. In the lowlands it is more likely to be found by canals such as the Llangollen at Blake Mere (first recorded by Perring in 1975) and the Montgomery in several places. It is occasional along the Roden and it has even been recorded by the Severn at the English Bridge in Shrewsbury (D.H. Wrench, 2010) and at Dowles (E.D. Pugh, 1976). Sometimes it spreads from pond or river margins into adjacent arable fields, as in a field of maize at Wolverley Park Farm in 1998, or into gardens, where some people cultivate it deliberately. George Potts considered it a 'most showy plant' in the Allotment Garden ground in Much Wenlock

(*Record of Bare Facts* 22, 1913). A reliable place to find it is in the off-line reserve at Aston Locks. It is mainly lowland: up to 376 m on Pen-y-wern Hill (SO315792, J. Clayfield, 1991).



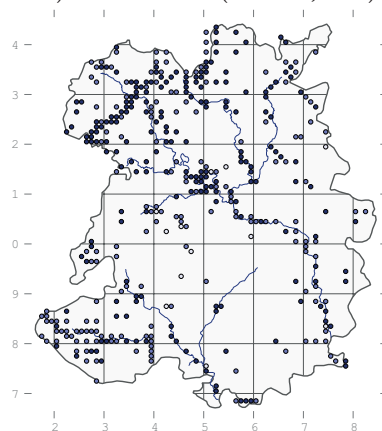
***Stachys palustris* L.**

**Marsh Woundwort**

Native. Local. Stable. Axiophyte: river banks, canals and marshy grassland.

First record: Williams, c. 1800, 'moist hedges, sides of pools and sometimes in cornfields.'

In a variety of habitats in seasonally inundated situations such as M22 *Juncus subnodulosus* fen-meadow at Crose Mere (Trueman, 1981); M27 *Filipendula ulmaria* at Cole Mere; and OV26 *Epilobium hirsutum* by the Severn in Shrewsbury. It does also, as Williams noticed, spread into the margins of arable fields or turn up where dredgings have been dumped at some distance from a river or pond. It is frequent along the canals, where it was first recorded by C.C. Babington on the Shrewsbury Canal in 1832. Although it is largely restricted to the main river valleys it does occur elsewhere, usually by minor rivers and occasionally by meres such as Cole Mere, Crose Mere (Trueman, 1981), Fenemere, Hencott Pool (D. Smallshire, 1983) and Berth Pool (P. Parker, 1983).



***Stachys annua* (L.) L.**

**Annual Yellow Woundwort**

Found by W.E. Beckwith in a sandy field near Buildwas in 1876, and seen again by him in 1882. In 1923 J.C. Melvill reported a single plant in about the same place. It is a very rare casual in Britain.

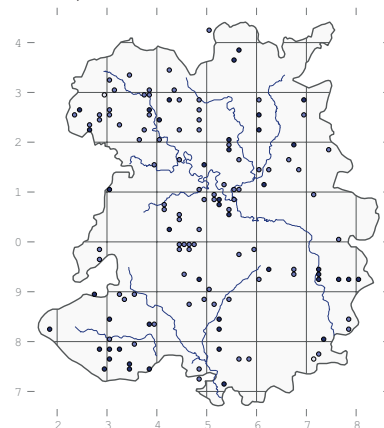
***Stachys arvensis* (L.) L.**

**Field Woundwort**

Archaeophyte. Scattered. Stable. Axiophyte: arable fields and waste ground.

First record: Williams, c. 1800, 'gravelly corn-fields.'

A casual on arable headlands, on bare ground on the sides of tracks and on other disturbed soils such as an organic vegetable bed at Hopesay (J. Clayfield, 2009). Trueman (1981) recorded it in OV13 *Capsella bursa-pastoris* vegetation on a road verge at Priorslee. Although it is very sporadic in appearance, a good place to look for it is in an arable field adjacent to Berrington Pool, where it has been seen several times since 1980 (P. Parker).



***Betonica officinalis* L.**

**Betony**

Native. Local. Stable. Axiophyte: grassland.

First record: Williams, c. 1800, 'woods and thickets, common.'

So far only recorded in MG5 *Festuca rubra* grassland in places like Wagbeach (Trueman, 1981), Derrington (A. Hillman, 1992), Gretton, Rushbury and Hayton's Bent (all D.H. Wrench, 1995) and, although it often occurs in woods and on hedgebanks, it prefers grassy places like the edges of rides, and most of these may well be essentially *Festuca rubra* grassland.

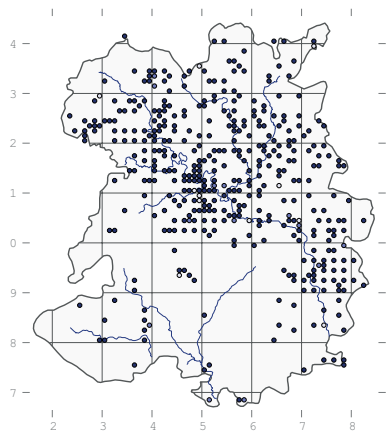
## *Ballota nigra* L.

### Black Horehound

Archaeophyte. Local. Stable. Hedges, waste ground, arable field margins.

First record: Williams, c. 1800, 'hedges, common.'

Frequent in roadside hedges, typically in W24 *Rubus fruticosus* scrub, as at Nobold. Lowland.



## *Leonurus cardiaca* L.

### Motherwort

Neophyte. Rare. Casual. Roadsides and waste ground.

First record: Williams, c. 1800, 'on the left-hand side of the road about fifty yards beyond Linley turnpike.'

A rare garden escape. The only recent records are from a garden at Brokenstones (C. Uff, 2008) and on the wall of Shrewsbury Abbey (K.K. Bell, 2012). It was naturalised at Burcote Rocks from at least 1953 (M.H. Bigwood) to 1976 (W.E. Hutton) and on waste ground at Pant from 1951 (E.R. Lloyd) until 1954 (M.H. Asterley).

## *Lamiastrum galeobdolon*

(L.) Ehrend. & Polatschek

### Yellow Archangel

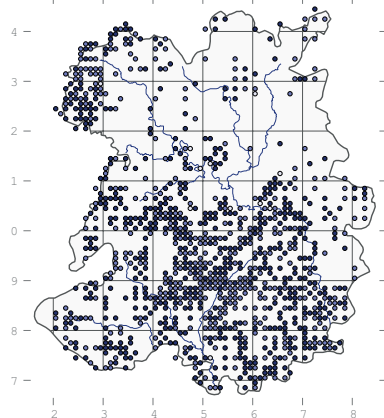
Native. Local. Stable. Axioophyte: woods.

First record (as *Galeobdolon luteum*): Williams, c. 1800, 'shady ditch banks.'

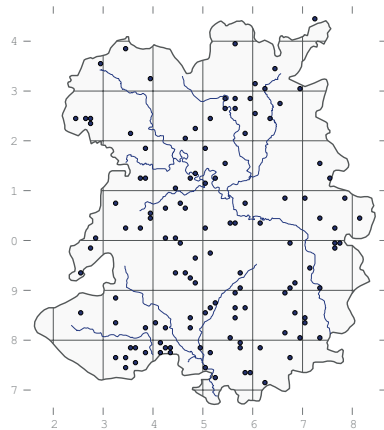
In neutral to calcareous woodland and on old hedge-banks with a woodland ground flora. Recorded in W7 *Lysimachia nemorum* at Birchen Park and Limekiln Wood (Trueman, 1981); in W8 *Fraxinus excelsior* everywhere; in W9 *Sorbus aucuparia* in Betchcott Hollow; and in W10 *Quercus robur* at Fron Wood, Mainstone and the Ercall (both Trueman, 1981), on Haughmond Hill, Hope Coppice and Stanway Coppice.

It freely colonises bare ground when adjacent to woodland, as in the disused

railway yard at Woofferton (M.M. Webster, 1975) and old mine workings at Broom Hill (A.K. Thorne, 1999). A good place to see it is at Benthall Edge, where it was first recorded by G. Maw in 1853. Most plants in the county are *L. galeobdolon* ssp. *montanum* (Pers.) Ehrend. & Polatschek, but the garden variety, ssp. *argentatum* (Smejkal) Stace, is occasional in hedges and on woodland edges near to houses or where garden rubbish has been dumped. Both can be seen in abundance at Poles Coppice.



## *Lamiastrum galeobdolon* ssp. *montanum*



## *Lamiastrum galeobdolon* ssp. *argentatum*

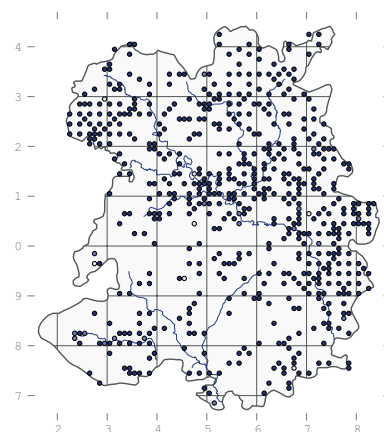
## *Lamium album* L.

### White Dead-nettle

Archaeophyte. Local. Stable. Road verges, field margins, river banks.

First record: Williams, c. 1800, 'ditch banks, common.'

Very common in MG1 *Arrhenatherum elatius* grassland on road verges, as at Preston Montford (S.T. Geikie, 2008); on field margins in communities such as OV25 *Cirsium arvense* at Norton, Stockton (Trueman, 1981); and in W6d *Sambucus nigra* woodland on river banks in places like the floodplain of the Severn in Shrewsbury and the Worfe at Beckbury. Also common on canal banks. Almost entirely restricted to the lowlands.



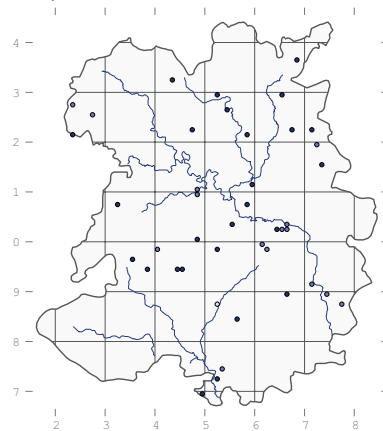
## *Lamium maculatum* L.

### Spotted Dead-nettle

Neophyte. Scattered. Stable. Gardens and roadsides.

First record: H.M. Auden, 1907, Munslow.

Occasional on roadsides near to houses. Not recorded as spreading in the wild, although a large population on verges near Benthall Hall has thrived since at least 1910 (J.C. Jinks, SHY).



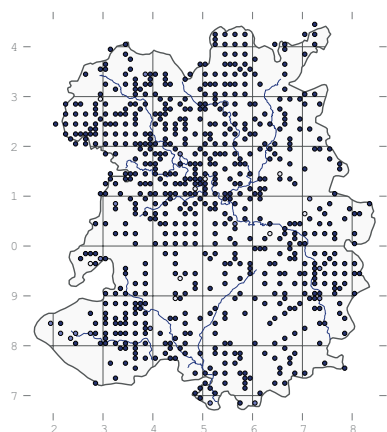
## *Lamium purpureum* L.

### Red Dead-nettle

Archaeophyte. Widespread. Stable. Roadsides, gardens,

First record: Williams, c. 1800, 'gardens, etc., common. Variety with white blossoms on the ditch bank on the right hand side of the road between Shrewsbury and Underdale.'

Typical of rather disturbed road verges such as OV23 *Dactylis glomerata* on the road embankment at Monkmoor; in OV10 *Senecio vulgaris* field margins at Lower Faintree and waste ground at Shifnal (Trueman, 1981); and in OV13 *Capsella bursa-pastoris* community on a roadside at Priorslee (Trueman, 1981) and a field margin at Upton Cressett. It is rarely abundant but widely scattered throughout, and absent from the higher hills.

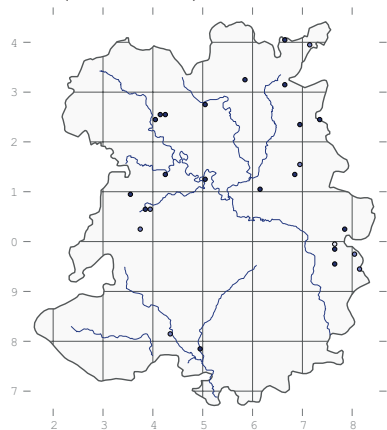


***Lamium hybridum* Villars**  
**Cut-leaved Dead-nettle**

Archaeophyte. Scattered. Increasing.  
 Axiophyte: species-rich arable fields.

First record: J. Fraser, 1863, Badger Dingle (HLU).

Some of the early records seem to be for plants of horticultural origin, such as Fraser's specimen from Badger Dingle or I.M. Bonner's 1968 record of it at Stokesay Castle. Since the 1970s it seems to have established itself as an arable weed, and it is found in crops of root vegetables or beans in sandy fields, usually in a fairly rich mix of other weeds such as *Fumaria officinalis* and *Viola arvensis*. In 2009 it was frequent in a field adjacent to Howle Pool where it grew in OV9 *Tripleurospermum inodorum* vegetation. A good place to see it is Burcotgate (SJ618105) where it was recorded in 1980 (A. Ashwell) and 2003 (S. O'Donnell).



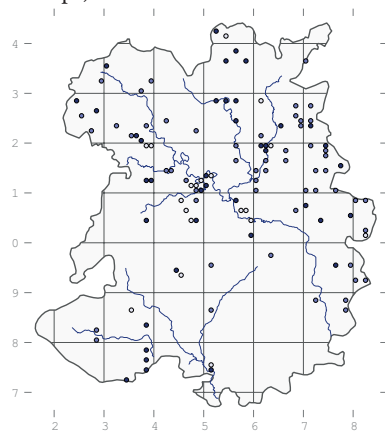
***Lamium amplexicaule* L.**  
**Hen-bit Dead-nettle**

Archaeophyte. Scattered. Decreasing.  
 Arable field margins, roadsides, walls, waste ground.

First record: Williams, c. 1800, 'sandy cornfields.'

Sandy disturbed ground in the lowlands, more often along roadsides and tracks than in arable fields. Recent

records have it growing in a flowerbed in Shrewsbury; on a railway bridge at Waters Upton; on the verge of the new Nesscliffe bypass; in the field behind the church and an organic vegetable plot in Hopesay (J. Clayfield, 2005); on roadsides in Meole Brace and Rowton; in the farmyard of Deepdale Farm; abundant along the track to Eaton Grange farm; and on a wall in Kemberton. It is often a casual of waste ground and transport corridors. A good place to look for it is around Meole Brace, where it has been recorded at intervals since 1878 (W. Phillips).



***Galeopsis segetum* Necker**  
**Downy Hemp-nettle**

Lloyd & Rutter (1957) reported that it had once been recorded as a casual in Division 8. A specimen at NMW gives the locality as Montford Bridge, but there are no further details.

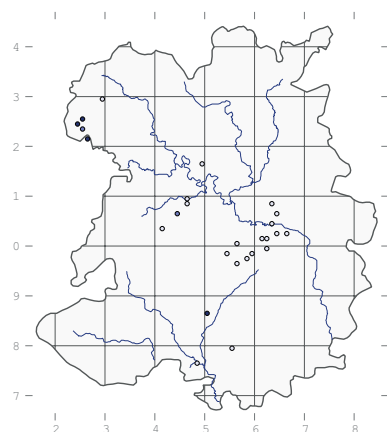
***Galeopsis angustifolia* Ehrh.**  
**ex Hoffm.**

**Red Hemp-nettle**

Native. Rare. Decreasing. Axiophyte: limestone scree and arable fields.

First records (as *G. ladanum*): Williams, c. 1800, 'ditch-banks, road-sides and cornfields about Much Wenlock, Buildwas, Ledwich, etc.'

A strong calcicole, arguably native on limestone scree such as that at Jones's Rough, where it was found by C. Johnson in 1987, but where it has not been seen for a decade or so since the reserve became overgrown. The only other site for it in the county is in the yard of the British Telecom building in Llanymynech (SJ266210, 2009), where thousands of plants occur on limestone chippings. In the past it was a common arable weed along Wenlock Edge, but it has not been seen there since 1903, when G. Potts saw it in fields near Edge Wood. In 1992 a few plants were seen at Bache Mill near Diddlebury by M.B. Fuller.

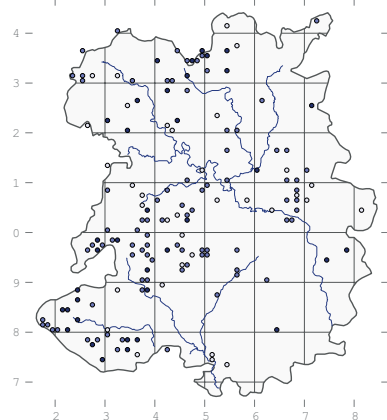


***Galeopsis speciosa* Miller**  
**Large-flowered Hemp-nettle**

Archaeophyte. Scattered. Decreasing.  
 Axiophyte: arable fields and waste ground.

First record: L. Brown, 1726, Bishops Castle.

In arable fields, especially on peaty soils and on disturbed ground on heaths and peat bogs such as Wem Moss, Whixall Moss (H.E. Forrest, 1924 and R.M. Stokes, 1996) and Prees Heath (J. Ramsbottom, 1907). There are recent records for it in places like Wolverley Park farm (1998), The Wood, Maesbrook (A.K. Thorne, 2002), Garn Bank and Hopton Castle (both J. Clayfield, 2010).



***Galeopsis tetrahit* L.**  
**Common Hemp-nettle**

Native. Widespread. Stable. Woods and wetlands.

First record: a Student in Physick, 1727, 'among the corn in SW parts.'

Occasional on rather damp, sometimes peaty soil. Recorded in M23 *Juncus effusus* at Newton Mere; OV26c *Filipendula ulmaria* at Berrington Pool; S24 *Calamagrostis canescens* at Fenemere; S27 *Comarum palustre* at Berrington Pool; W6 *Salix* × *fragilis* at Marton Pool, Chirbury (these 4 all Wigginton, 1979); W8 *Fraxinus excelsior* at Betton Pool; and W10 *Quercus robur* at Bushmoor Coppice.



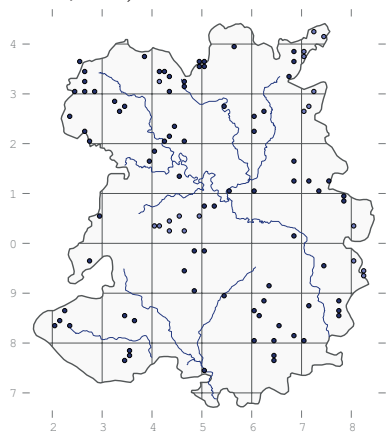
## *Galeopsis bifida* Boenn.

### Bifid Hemp-nettle

Native. Scattered. Stable. Heath, woods and mires.

First record: B.R. Fowler, 1976, 'disturbed ground by field pool, Boningale.'

Occasional on damp, peaty soils, being recorded in M23 *Juncus effusus* and M24 *Cirsium dissectum* at Black Coppice; M27 *Filipendula ulmaria* at Berrington Pool (M.J. Wigginton, 1979) and Black Coppice; S14 *Sparganium erectum* at Berrington Pool; S26 *Phragmites australis* at Fenemere and Black Coppice; S27 *Comarum palustre* at Berrington Pool (Wigginton, 1979); and W5 *Alnus glutinosa* woodland at White Mere (Wigginton, 1979) and Sweat Mere. It is not restricted by altitude, growing at 459 m on Brown Clee (SO600861, Whild, 2011).



## *Marrubium vulgare* L.

### White Horehound

Native. Rare. Decreasing. Gardens and acid grassland.

First records: Williams, c. 1800, 'gravelly ditch banks, not uncommon; about Bridgnorth; between Cross Houses and Cound.'

Arguably native in acid grassland such as U1 *Rumex acetosella* at Boreton Bank, where it has been recorded since 1950 (N.M. Mackenzie) and was last seen by R.M. Stokes in 1997. The only other recent record was of a garden escape at Pedlar's Rest in 1970 and 1971 (H. Hand), but it did not persist.

## *Scutellaria galericulata* L.

### Skullcap

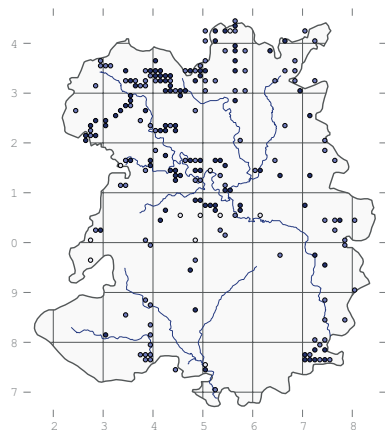
Native. Local. Stable. Axiophyte: pond margins, riverbanks, canals, swamps and wet woods.

First record: E. Lhwyd, 1681, Melverley 'in ye ditches before you passe over Severn going to Breiddin hill.'

In a wide variety of wet habitats, including MG10 *Holcus lanatus* rush-pasture on the margins of pools at Brown Moss; OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979); M22 *Juncus subnodulosus* at Crose Mere; M23 *J. effusus* at Bomere Pool; and M27 *Filipendula ulmaria* at the Mere.

In the Old River Bed it occurs in taller vegetation, including OV26 *Epilobium hirsutum* tall herb and S7 *Carex acutiformis* swamp. Other swamp communities for it include S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986) and Fenemere (C. Walker, 1988); S4 *Phragmites australis* at Sweat Mere (Wigginton, 1979); S5 *Glyceria maxima* and S6 *Carex riparia* at Blake Mere (Wigginton, 1979); S12 *Typha latifolia* at Brown Moss, the Long Bog and Shrawardine Pool; S14 *Sparganium erectum* at Kettle Mere; S17 *Carex pseudocyperus* at Shrawardine Pool; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Marton Pool, Chirbury (Wigginton, 1979); and S27 *Comarum palustre* in many places, including Berrington, Bomere and Shomere pools.

It is at least as common in wet woods, and it has been recorded in W1 *Salix cinerea* at Shomere and Berrington Pool; W4 *Betula pubescens* at Shomere and Calcott Moss; in all stands of W5 *Alnus glutinosa*; W6 *Salix* × *fragilis* woodland at Holly Coppice, Brown Moss and the Mere; and even in W10 *Quercus robur* woodland at Shrawardine Pool.



## *Scutellaria* × *hybrida* Strail (*galericulata* × *minor*)

### Hybrid Skullcap

A specimen at OXF, collected by G.C. Druce at Bomere Pool in September 1892, is labelled as this hybrid but it is of too poor quality to be confirmed.

## *Scutellaria minor* Hudson

### Lesser Skullcap

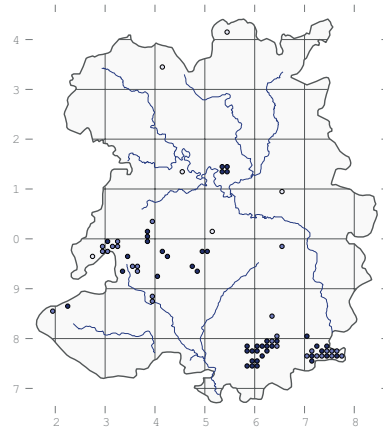
Native. Local. Decreasing. Axiophyte: upland flushes, bogs, peaty woods.

First record: Williams, c. 1800, 'on the boggy spots of ground at the bottom of Haughmond Hill.'

A perennial of acid, peaty soils, often where there is some lateral movement of water, in upland flushes and by streams. It is most common around Titterstone Clee, where it was first recorded by W. Corbett in 1841, and in the Wyre Forest, where G. Jordan found it at about the same time.

It has been recorded in M6 *Carex echinata* on Stapeley Hill (Trueman, 1981); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; and both M23 *Juncus effusus* and W4 *Betula pubescens* on Haughmond Hill.

Away from its core populations it has disappeared from several isolated sites such as Oxon Pool (Leighton, 1841), 'Whitchurch' (possibly Brown Moss or Prees Heath) (H. Sandford, 1849), Blake Mere (J.W. Heath, 1894), Limekiln Wood (Painter, 1897) and Shirlett Common (G. Potts, 1901-1921). Places where it is still thriving include Clun Forest and the Stiperstones (both A.K. Thorne, 2002), the Long Mynd (M. Cousins, 2001) and Catherton Common (Bingham, 2008). It is recorded as high as 478 m on Titterstone Clee (SO597776, 2011).



## *Teucrium scorodonia* L.

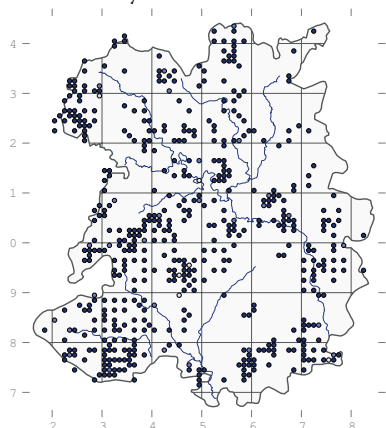
### Wood Sage

Native. Local. Stable. Rock, hedgebanks, quarries and woodland.

First record: Williams, c. 1800, 'hedges, common.'

In dry places on a range of soils and a wide variety of habitats. Widespread in grasslands such as CG2 *Avenula*

*pubescens* at Blackbridge Quarry, Craig Sychtyn and Jones's Rough; MG5 *Festuca rubra* on Llyncllys Hill and Crickheath Hill (Packham, 1979); and in U1 *Rumex acetosella* on Earl's Hill, Haughmond Hill, Prees Heath and Stapeley Hill. Often it is found on rock outcrops such as the OV39 *Asplenium trichomanes* on Holloway Rocks (Trueman, 1981) and in woods such as W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981), Haughmond Hill, Craig Sychtyn and a hill south of White Mere; W10 *Quercus robur* at Haughmond Hill and Snailbeach; W16 *Quercus petraea* at Oaks Wood; W21 *Crataegus monogyna* scrub on Earl's Hill; and W23 *Ulex europaeus* scrub on Old Oswestry.



### *Teucrium chamaedrys* L.

#### Wall Germander

Neophyte. Rare. Stable. Walls.

First records: Williams, c. 1800, 'on the ruins of Wenlock Abbey over a stable'; and 'on the walls of Whittington Castle garden opposite the road'.

An uncommon garden escape, sometimes established on walls and rock exposures. The only current site is the Hermitage, Bridgnorth, where it was first recorded in about 1876 (probably by W. Phillips) and it was refound by Trueman in 1986. It was still there in 2000 (J. Clayfield). It has also been recorded at Oretton (G. Jordan, 1841), Oswestry (T. Salwey, 1855), Quatford (G.C. Druce, 1911) and in the Wyre Forest (Leighton, <1889). It lasted at Whittington Castle until 1920 (O.M. Feilden).

### *Teucrium botrys* L.

#### Cut-leaved Germander

One plant of unknown provenance in a garden at Aston Munslow (SO511866, M.B. Fuller, 1998, BIRM).

### *Ajuga reptans* L.

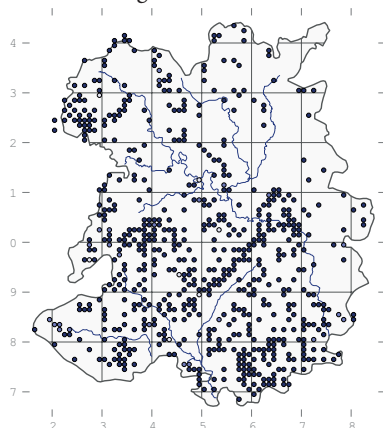
#### Bugle

Native. Widespread. Stable. Woodland and grassland.

First record: Williams, c. 1800, 'pastures, common'.

Typical of rather damp species-rich grassland and ancient woodland sites. In grasslands it is recorded in CG3 *Bromopsis erecta* at Hilltop (D.H. Wrench, 1994); MG1 *Arrhenatherum elatius* in Ropewalk Meadow; MG4 *Sanguisorba officinalis* at Lord's Meadows (Trueman, 1981); MG5 *Festuca rubra* in many places, including Llanhowell (Trueman, 1981), Nant-y-myssels and Ruewood; MG8 *Caltha palustris* at Molverley Farm, Morton Pool (Wrench, 1991) and Ruewood (Trueman, 1980); MG10 *Holcus lanatus* at Hope Coppice; M22 *Juncus subnodulosus* at Morton Pool (Wrench, 1991) and Porth-y-waen (Trueman, 1981); and M23 *Juncus effusus* at Brook Vessons, Haughmond Hill and Paulith Bank (Trueman, 1981). M.J. Wigginton (1979) found it colonising OV30 *Bidens tripartita* on the margins of Marton Pool, Chirbury.

In woods it is found in W5 *Alnus glutinosa* at Black Coppice, Cole Mere and Crose Mere; W7 *Lysimachia nemorum* at Brook Vessons and Limekiln Wood (Trueman, 1981); W8 *Fraxinus excelsior* in many places, including Blakeway Coppice and Limekiln Wood; W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* on Haughmond Hill.



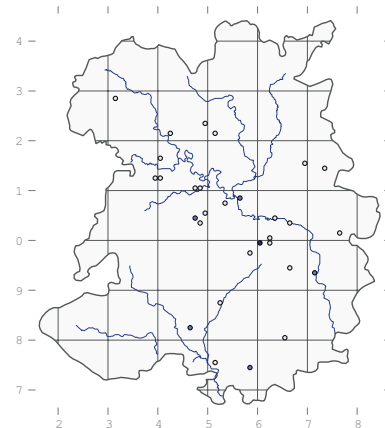
### *Nepeta cataria* L.

#### Cat-mint

Archaeophyte. Rare. Decreasing. Hedges.

First records: Williams, c. 1800, 'ditch banks by the side of the road between Cross Houses and Cound; about Morvill; Cardiston, Ensdon, etc.; Ludlow; in Condover; between Shrewsbury and Nobold'.

The only recent site was in a W8 *Fraxinus excelsior* hedge in Blakeway Hollow, SO608996 (Whild, 1993 and R.M. Stokes, 2001). Formerly established on roadsides and railways such as the A5 near Shrewsbury (C.M. Dony, c. 1950) and the railway bridge at Dorrington (R.D. Benson, 1891, SHYB), or in old places like Lilleshall Abbey (R.G. Higgins, 1841 and W.E. Beckwith, 1882) or Viroconium (J.C. Melvill, 1905 – E.M. Rutter, 1963).



### *Nepeta × faassenii* Bergmans ex Stearn (*nepetella* × *racemosa*)

#### Garden Cat-mint

A casual at Prees Heath (R.J. Swindells, 2003) and a car park at Quatt (A.G. Blunt, 2011).



*Clinopodium acinos* at Wenlock Edge



*Lycopus europaeus* at Berrington



## *Glechoma hederacea* L.

### Ground-ivy

Native. Widespread. Stable. Woodland edge, scrub, hedges and grassland.

First record: Williams, c. 1800, 'hedges, common.'

Very common in hedges and the edges of woodland. It is recorded in CG3 *Bromopsis erecta* in Lea Quarry; MG1 *Arrhenatherum elatius* in Buildwas churchyard and on the banks of the Severn in the Quarry, Shrewsbury; in M27 *Filipendula ulmaria* at the Moors, Ellesmere; and in U1 *Rumex acetosella* grassland in Attingham Deer Park.

In woods it is found in W5 *Alnus glutinosa* at White Mere; W6 *Salix × fragilis* at Hencott Pool, the Mere at Ellesmere and Redhill Coppice; W6d *Sambucus nigra* scrub by the Worfe at Beckbury and the Severn at Shelton Rough; W7 *Lysimachia nemorum* at Birchen Park; W8 *Fraxinus excelsior* everywhere; W10 *Quercus robur* on Haughmond Hill and Maddocks Hill (Trueman, 1981); W21 *Crataegus monogyna* hedges and scrub in many places, including by the Shrewsbury Canal at Uffington; and W24 *Rubus fruticosus* hedgebanks in places like Lower Wallop and Day Houses.

## *Prunella vulgaris* L.

### Selfheal

Native. Widespread. Stable. Grassland, paths, disturbed ground.

First record: Williams, c. 1800, 'pastures, common.'

Common in lawns and grassy tracksides, mainly in damp places on base-rich soils. It is frequent in a wide range of grassland types, including CG2 *Avenula pubescens* in many places, including Craig Sychtyn and Llynclys Hill; CG3 *Bromopsis erecta* in all the quarries and meadows on Wenlock Edge; CG7 *Thymus polytrichus* in Farley and Nantmawr quarries; MG1e *Centaurea nigra* at Roman Bank; in all MG5 *Festuca rubra* meadows throughout; MG6 *Cynosurus cristatus* at Cramer Gutter and Ruewood; MG8 *Caltha palustris* at Crose Mere, Meverley Farm, Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* in Easthope Wood; MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981); U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005) and Lilleshall Quarry; and U4 *Agrostis capillaris* at Cwm Collo.

Often it is found in flushes such as M10 *Carex dioica* on Hope Bowdler

Hill (P. Eades, 2010); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Morton Pool (Trueman, 1981), Sweeny Fen, Trefonen Marshes and Crose Mere (Trueman, 1981); M23 *Juncus effusus* at Cole Mere (M.J. Wigginton, 1979), Cramer Gutter, Fenemere, Gogbatch (C.M. Owen, 1983) and Ruewood; M24 *Cirsium dissectum* at Cole Mere; and M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983).

At White Mere it is recorded as a colonist of bare mud in OV30 *Bidens tripartita* and at Bomere Pool it grows in S27 *Comarum palustre* (both Wigginton, 1979).

A characteristic place for it is along woodland rides, and in this habitat it has been found in OV28 *Ranunculus repens* community (J. Bingham, 1986), but it also occurs in W7 *Lysimachia nemorum* on Llynclys Hill and W8 *F. excelsior* at Craig-Ilwyn, Llynclys Hill, Sodylt Wood and Stoke Wood. It is not restricted by altitude and it undoubtedly grows in every tetrad in the county. An exceptionally tall plant (stem 67 cm, total height 75 cm) was found growing in MG1 *A. elatius* grassland by a path on Haughmond Hill in 2012 (SJ54781335, J. Mobarak, BIRM).



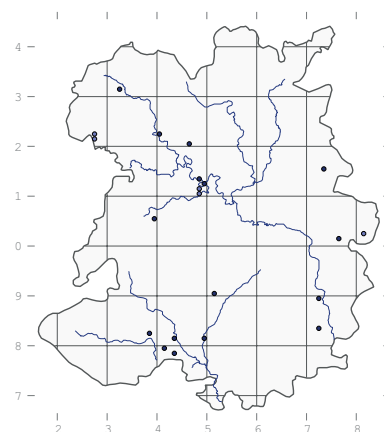
## *Melissa officinalis* L.

### Balm

Neophyte. Scattered. Increasing. Gardens, roadsides.

First record: J.C. Melvill, 1904, Kingsland, Shrewsbury (Record of Bare Facts 14, 1905).

Widely grown in gardens and sometimes established for a while, usually on roadsides close to houses. Trueman (1981) recorded it in OV21 *Plantago major* in a garden in Pant. A good place to see it is along the roadside at Roman Bank (SO517907).



## *Clinopodium ascendens*

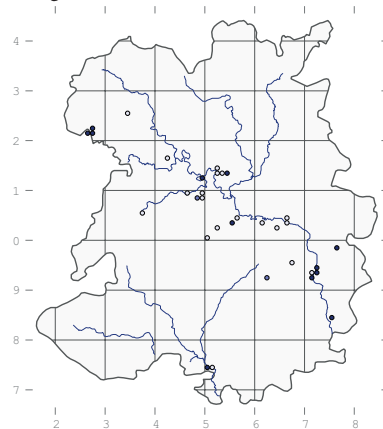
(Jordan) Samp.

### Common Calamint

Native. Scarce. Stable. Axiphyte: walls, roadsides,

First records (as *Calamintha officinalis*): Williams, c. 1800, 'sides of roads about Coalbrookdale, in Sheinton churchyard, between Uffington and Sundorne, Harnage, Haughmond Hill, and Minsterley.'

Mostly associated with roadsides and old walls, in calcareous habitats and gardens. At Bridgnorth it grows on the walls of the High Town and at High Rock (J. Clayfield, 2005) and at Ludlow Castle it grows on the stonework the base of the keep (A.K. Thorne, 2001). There are also recent records of it on mining waste at Highley-Alveley Country Park (J. Bingham, 2001), along a ride in W8 *Fraxinus excelsior* woodland at Stevenshill (N.P. Jones, 2005), and on rock ledges at Llanymynech Rocks (R.M. Stokes, 1994). It seems to be rather short-lived in most sites, although it has been recorded at Bridgnorth since 1862 (J. Fraser) and at Ludlow since 1841 (Leighton).



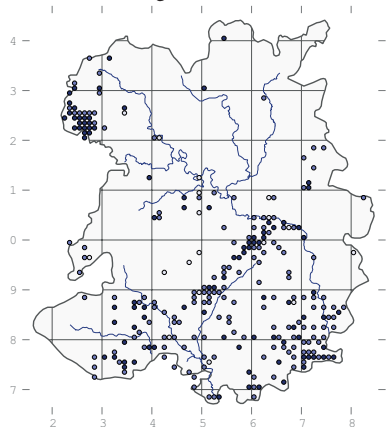


***Clinopodium vulgare* L.****Wild Basil**

Native. Local. Decreasing. Axiphyte: hedgebanks, quarries, scrub.

First record: Williams, c. 1800, 'ditch banks in a gravelly soil.'

In grassland on calcareous soils such as CG3 *Bromopsis erecta* at Hilltop Meadow (D.H. Wrench, 1994) and Lea Quarry, in CG7 *Thymus polytrichus* in Farlow Quarry, and in MG1e *Centaurea nigra* at Roman Bank. It is a colonist of bare ground, but it persists in lightly grazed grassland and scrub indefinitely. Although it is mainly concentrated in the limestone districts, it occurs wherever there are small patches of base-rich soil. A good place to look for it is along Blakeway Hollow. Lowland: up to about 250 m on Wenlock Edge.

***Clinopodium acinos* (L.)**

Kuntze

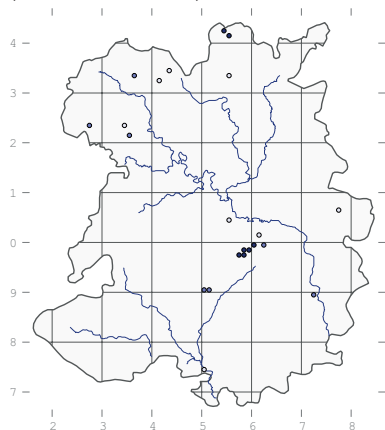
**Basil Thyme**

Native. Scarce. Stable. Axiphyte: limestone grassland, quarries, railways.

First record (as *Thymus acinos*): Williams, 1799, 'banky pasture above the mill stream near Cound paper mill.'

An annual of bare ground in calcareous grassland, historically on eroded banks in heavily-grazed pasture, but now restricted to quarries and railway lines. In 1953 E.M. Rutter first found it on Llynclys Hill, and on 15<sup>th</sup> July 1955 he described the vegetation as 'luxuriant owing to the absence of rabbits. Probably finer than ever seen in living memory – all plants growing in profusion to full height.' It has not been seen on Llynclys Hill again; presumably it only thrived for the brief period between over- and under-grazing. The best place to see it now is at Lea Quarry on Wenlock Edge, where it is frequent in rather thin CG3 *Bromopsis erecta* grassland along the path by Blakeway Coppice. It has also

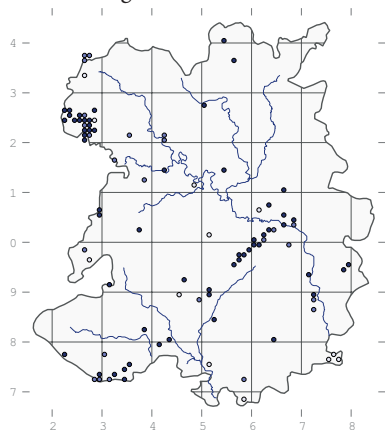
been seen recently at Coates Quarry, Lilleshall Quarry (R.M. Stokes, 1994) and along a track in Easthope Wood (Stokes, 1996). In 1993 J.M. Hooson recorded it along a disused railway line in Whitchurch. An atypical site for it was found by E.M. Rutter in 1956 at Knockin Heath, which has rather acidic sandy soils. Although it has been recorded regularly on Wenlock Edge since Leighton's time, at other sites it seems to have been only a casual. Lowland: up to 240 m at the top of Coates's Quarry on Wenlock Edge (SO60309945, 2003).

***Origanum vulgare* L.****Wild Marjoram**

Native. Local. Stable. Axiphyte: grassland, roadsides.

First records: Williams, c. 1800, 'by the side of the road between Frodesley and Frodesley Green. On the left hand side of the road between Willey and the Bridgnorth turnpike road.'

In grassland and scrub on calcareous soils. Recorded in CG2 *Avenula pubescens* in Blackbridge Quarry and at Craig Sychtyn; CG3 *Bromopsis erecta* in Lea Quarry; MG1e *Filipendula ulmaria* vegetation on a hedgebanks at the Speller; and in W8 *Fraxinus excelsior* scrub at Blodwel Rock and in a quarry at Stokes's Barn (the last two by Trueman, 1981). A good place to see it is in Pattens Rock Quarry on Benthall Edge.

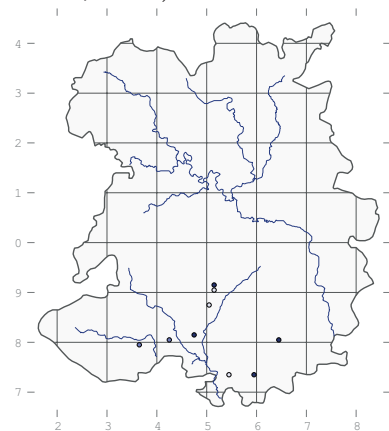
***Thymus pulegioides* L.****Large Thyme**

Native. Rare. Decreasing. Axiphyte: limestone grassland.

First record (as *T. serpyllum* var. *γ*): Williams, c. 1800, 'about Farlow lime rocks.'

There has been a lot of confusion about the identification of this species, so records should be treated with caution unless supported by voucher specimens. The only definite site for it is on old lime workings at Farlow, now a steep field at Foxholes farm, SO643803, where it occurs in abundance in MG5b *Galium verum* and CG3 *Bromopsis erecta* grassland. It has also been reported recently on a dry bank by the roadside at Burley (SO474817, H. Hand, 1977-1986), in a field of limestone grassland at Knowlegate (SO597734, R. Rowe, 1982 – J. Bingham, 1988) and at Roman Bank (SO5191, J. Clayfield, 2003), where it was first recorded by W.E. Thompson in 1900: 'a small quantity on the top of Wenlock Edge, on the edges of rocky banks under the shade of gorse, between Roman Bank and Upper Millichope. Flowers in distant leafy whorls with long pedicels.'

There are older records of it in a small quarry between Aston Munslow and Little London Farm (W.E. Thompson, 1900), in the middle of a track at Twitchen (SO367795, R. Rowe, 1982) and on View Edge (SO426806, I.R. Bonner, c. 1970).

***Thymus polytrichus* A.**

Kerner ex Borbas

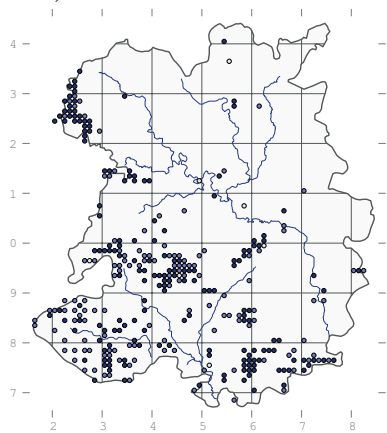
**Wild Thyme**

Native. Local. Stable. Grassland and rock outcrops.

First records (as *T. serpyllum*): Williams, c. 1800, 'hills and hilly pastures, common. About Wenlock lime-rocks.'

In calcareous grassland, specifically CG2 *Avenula pubescens* in Ballstone Quarry, Blackbridge Quarry, Craig

Sychtyn, Jones's Rough, Llynclys Hill, Moelydd, the Novers (Trueman, 1981) and Windmill Hill; CG3 *Bromopsis erecta* at the Foxholes and Ippikin's Rock; CG7 *Thymus polytrichus* on rock outcrops on Moelydd and at Presthope; and CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and in Minton Batch (R. Tapper, 1983). Its other main habitat is in similarly short, bare U1 *Rumex acetosella* on acid or sandy soils, as on Abbot's Castle Hill, Earl's Hill and Titterstone Clee (Trueman, 1981). At High Rock, Bridgnorth, it has been recorded in W24 *Rubus fruticosus* scrub (Trueman, 1981).



*Euphrasia arctica* at Pennerley Meadows



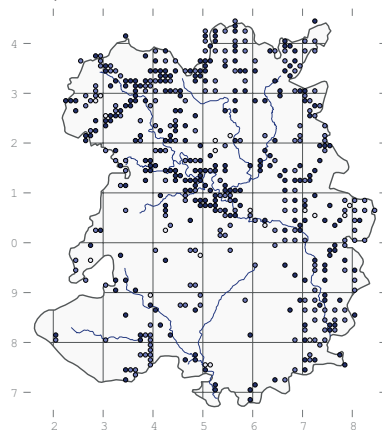
*Pedicularis sylvatica*

### *Lycopus europaeus* L.

#### Gipsywort

Native. Local. Stable. Rivers, pools and canals.

First records: Williams, c. 1800, 'sides of pools, common. Hadnall Church, Cole Mere, Morda Pool.'



In shallow water and bare mud by pools and rivers, often persisting in more closed vegetation and wet woodland. When water levels are high it can be found in aquatic communities such as A8 *Nuphar lutea* vegetation at Betton Pool (M.J. Wigginton, 1979) and it sometimes occurs in marshy grassland such as MG8 *Caltha palustris* at Crose Mere or MG10 *Holcus lanatus* at Brown Moss. It is quite common in M23 *Juncus effusus* in places like Bomere Pool, Cole Mere (Wigginton, 1979), Ebnal Pool (Trueman, 1981), Newton Mere and Oxon Pool and in M27 *Filipendula ulmaria* at Black Coppice, Cole Mere and the Moors, Ellesmere.

As a coloniser of bare mud it is recorded in OV26 *Epilobium hirsutum* tall herb at Betton Pool and by the Severn near Shrewsbury Castle; OV30 *Bidens tripartita* at Brown Moss, Marton Pool, Chirbury (Wigginton, 1979) and Newton Mere; OV31 *Rorippa palustris* at Brown Moss; OV32 *Ranunculus sceleratus* at Crose Mere and White Mere; and OV35 *Lythrum portula* at White Mere. There is also often a lot of bare ground in swamps such as S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S6 *C. riparia* at Blake Mere (Wigginton, 1979) and Fenemere; S12 *Typha latifolia* at Berrington Pool, Shrawardine Pool and elsewhere; S14 *Sparganium erectum* at Kettle Mere and Brown Moss; S17 *C. pseudocyperus* at Oxon Pool; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Marton Pool, Chirbury (Wigginton, 1979) and in the old Shrewsbury Canal at Wappenshall; and

S27 *Comarum palustre* at Berrington Pool, Brown Moss and elsewhere.

In woodlands it is recorded in W1 *Salix cinerea* carr at Shomere and the Mere; W4 *Betula pendula* at Lin Can Moss and Shomere; in all stands of W5 *Alnus glutinosa*; in W6 *Salix* × *fragilis* at Blake Mere, Hencott Pool and elsewhere; and even in W10 *Quercus robur* around Shrawardine Pool when the water level was particularly low for several years. Mostly lowland but up to 425 m at Wildmoor Pool.

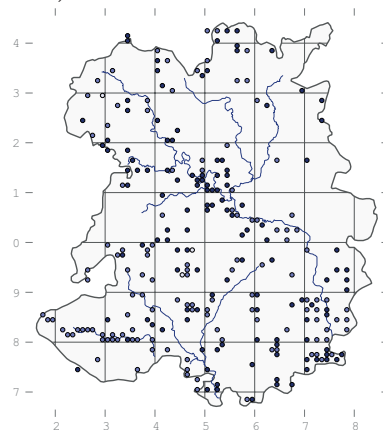
### *Mentha arvensis* L.

#### Corn Mint

Native. Local. Stable. Fields, woodland tracks, river banks.

First record: Williams, c. 1800, 'corn fields and sides of pools, common.'

In MG10 *Holcus lanatus* rush-pasture and MG13 *Alopecurus geniculatus* grassland (Trueman, 1983) around pools at Brown Moss; M22 *Juncus subnodulosus* at Morton Pool; M23 *J. effusus* at Ebnal Pool (both Trueman, 1981); and OV30 *Bidens tripartita*, S12 *Typha latifolia* and S14 *Sparganium erectum* swamps at Brown Moss. Mostly lowland, but up to 385 m on Brown Clee (SO60628655, Whild & Trueman, conf. R.M. Harley, BIRM, 2011).



### *Mentha* × *verticillata* L.

(*arvensis* × *aquatica*)

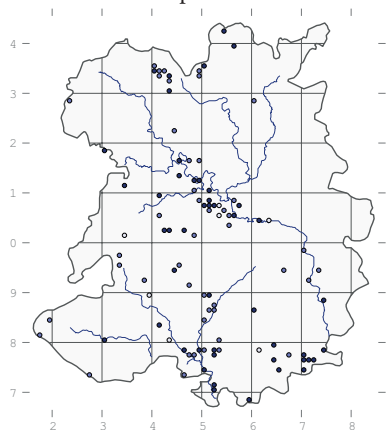
#### Whorled Mint

Native. Local. Stable. River banks, pools.

First record: Leighton, 1835, Oxon Pool (det. R.A.H. Graham, CGE)

In similar places to Water Mint. Recorded in A8 *Nuphar lutea* community at Betton Pool (M.J. Wigginton, 1979); MG8 *Caltha palustris* at Crose Mere; M23 *Juncus effusus* at Cole Mere (Wigginton, 1979); OV26 *Epilobium hirsutum* by the Severn near Shrewsbury Castle;

OV30 *Bidens tripartita* on the margin on Newton Mere (Wigginton, 1979); OV35 *Lythrum portula* at Llyn Rhuddwyn (Trueman, 1981); S9 *Carex rostrata* swamp at Berrington Pool, S14 *Sparganium erectum* at Betton Pool; and S27 *Comarum palustre* at Berrington and Bomere pools (the last four by Wigginton, 1979). It sometimes persists in open woodland such as W1 *Salix cinerea* carr at the Moors, Ellesmere and W5 *Alnus glutinosa* at Cole Mere and Top Pool.



***Mentha × smithiana* R.A. Graham** (*arvensis* × *aquatica* × *spicata*)

**Tall Mint**

Neophyte. Rare. Stable. River banks, canal sides and edges of ponds.

First records (as *M. rubra*): Williams, c. 1800, 'by the side of Pitchford Ford mill-stream near the cascade; by the side of the road to Monk's Hopton' and W. Sole, c. 1800, 'in various waters in Coalbrookdale, as well as in wet places between Kidderminster and Bridgnorth.'

A rare garden escape, seen recently in just two places: by the Montgomery Canal above Llanymynech (SJ2721, 1998) and at Mousecroft Lane Gravel Pit (SJ473108, 2008, both conf. R.M. Harley, BIRM). There are older records of it in the Meole (Rea) Brook (J.E. Bowman, 1841 & J.C. Melvill, 1906, NMW), by the Severn at Eaton Constantine (W.E. Beckwith, 1882, det. R.A.H. Graham, CGE) and Rednal Pond (D. Hughes, 1975, det. Perring, LTR).

***Mentha × gracilis* Sole** (*arvensis* × *spicata*)

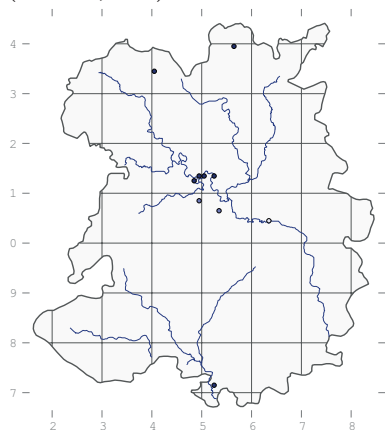
**Bushy Mint**

Native. Local. Stable. Rivers and ponds.

First record: W. Blake, 1820, 'Shropshire' (det. R.A.H. Graham, OXF)

Occasional on the margins of rivers and ponds, in OV31 *Rorippa palustris* vegetation around shallow pools

at Brown Moss. It might be quite frequent on the banks of the larger rivers, having been recorded by the Severn at Underdale (R.M. Stokes, 1995), Frankwell (R. Iremonger det. R.M. Harley, 1998), Monkmoor (N.F. Stewart, 2005) and Buildwas (Anon., 1843, det. Harley, MANCH), and by the Teme at Ashford Carbonel. It has also been recorded at Bomere Pool (A.D. Skelding, 1951) and the Mere at Ellesmere. The only record in Sinker's Flora was from a pool at Eaton Mascott (P. Parker, 1978).



***Mentha aquatica* L.**

**Water Mint**

Native. Widespread. Stable. Rivers, swamps, wet woodland and marshy grassland.

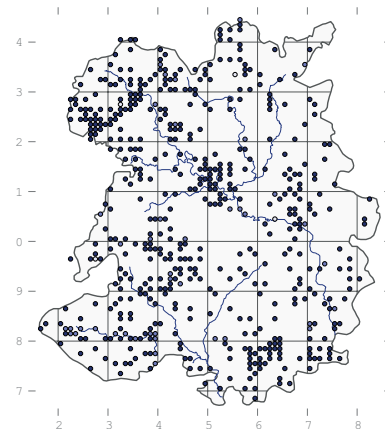
First record (as *M. rotundifolia*): L. Brown, 1726, 'by ye sides of rivulets not uncommon about Bishops Castle.'

Widespread in wetlands throughout the county. Typical habitats include MG10 *Holcus lanatus* rush-pasture in a ditch across a damp field at Broncroft and in a spring in a meadow at Brown's Corner (Trueman, 1981), or in MG13 *Alopecurus geniculatus* grassland in a drainage ditch at Ruewood (Trueman, 1980). In mires it is found in M10 *Carex dioica* on Hope Bowdler (P. Eades, 1910), Shirlett Gutter (Trueman, 1980) and Trefonen Marshes; M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010) and Trefonen Marshes; M22 *Juncus subnodulosus* at Crose Mere, Sweeny Fen and elsewhere; in many stands of M23 *Juncus effusus* in lowland sites such as Black Coppice Meadow and upland streamsides as on the Stiperstones; M27 *Filipendula ulmaria* at Black Coppice and Cole Mere; and in M29 *Potamogeton polygonifolius* in Callow Hollow (R. Tapper, 1983).

It spreads vigorously over bare ground by rivers and ponds, as in OV26 *Epilobium hirsutum* in the Old River Bed, Shrewsbury; OV30

*Bidens tripartita* around Marton Pool, Chirbury, and White Mere (both M.J. Wigginton, 1979); OV31 *Rorippa palustris* at Fenemere (Wigginton, 1979); and OV32 *Ranunculus sceleratus* at Crose Mere and White Mere. In more established swamps it is also widespread and often abundant, in communities such as S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S7 *C. acutiformis* in the Old River Bed; S9 *C. rostrata* at Wildmoor Pool (Trueman, 1981); S10 *Equisetum fluviatile* in a ditch across the Old River Bed; S12 *Typha latifolia* in a pool at Brown Moss; S14 *Sparganium erectum* on the margins of Kettle Mere; S18 *C. otrubae* on a woodland edge at the Speller; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Oss Mere; and S27 *Comarum palustre* at Bomere Pool (Wigginton, 1979) and Brown Moss (Trueman, 1983).

It also tolerates light shade in wet woods, including W1 *Salix cinerea* carr at the Mere; W5 *Alnus glutinosa* in many places, Cole Mere, Crose Mere and Morton Pool; and W6 *Salix × fragilis* in Holly Coppice on Haughmond Hill and at Brown Moss. It occurs up to about 425 m at Wildmoor Pool.



***Mentha × piperita* L.** (*aquatica* × *spicata*)

**Peppermint**

Neophyte. Scattered. Stable. Gardens, riverbanks, roadsides, waste ground.

First records (as *M. piperita* Sm.): Williams, c. 1800, 'on some waste ground in the village of Haughton; Buildwas mill-stream, below the mill; Lawley's Cross mill-stream above Buildwas.'

A common garden plant but also sometimes occurring as a spontaneous hybrid. There are recent records of it in places such as the banks of the Severn at Hampton Load (SO746868, 2003) and road verges at Weston Lullingfields (SJ423258, P. Parker, 2004) and along Catsbitch Lane (SJ647189, 2008).



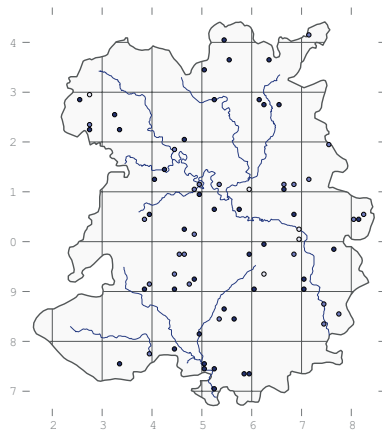
## *Mentha spicata* L.

### Spear Mint

Archaeophyte. Scattered. Stable. Roadsides, waste ground, riversides.

First records (as *M. sylvestris*): Williams, c. 1800, 'by the side of the road in the village of Monks Hopton' and 'on the left hand side of the road between Uckington and Overley Hill about 1 or 200 yards below the turning to Walcot.'

A garden escape, widely established on road verges and waste ground near houses, especially in rather damp places such as river banks and stream sides. It does not seem to be very persistent, to judge from the small number of records at each site. Good places to look for it include the banks of the Teme around Ludlow and Ashford Carbonel and along the brook at Broncroft.



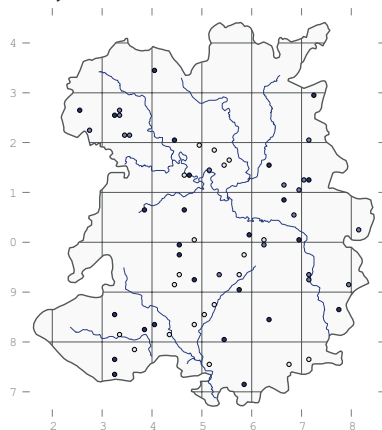
## *Mentha × villosa* Huds.

(*spicata* × *suaveolens*)

### Apple-mint

Neophyte. Scattered. Stable. Roadsides, waste ground, river banks.

First records (as *M. rotundifolia*): W. Sole, 1800, 'on a common at Elsmoor; Wenlock Abbey.'



A common garden plant, often found established on road verges in damp places, where it can thrive for many years. It was still present at Ellesmere in 1997 (SJ406345, conf. R.M. Harley,

BIRM) and it was recorded at Aston Locks from 1954 (E.A. Wilson) to 1997 (SJ3225, conf. Harley); in Gogbatch from 1891 (W. Phillips) to 1992 (H.M. Davidson); and at Trefonen from 1961 (H. Murrell) till 2006 (R.A. Dawes).

Records of *M. suaveolens* Ehrh., Round-leaved Mint and *M. rotundifolia* Huds. have here been included under *M. × villosa*. All plants reliably identified so far have been var.

*alopecuroides* (Hull) Briq.

## *Mentha pulegium* L.

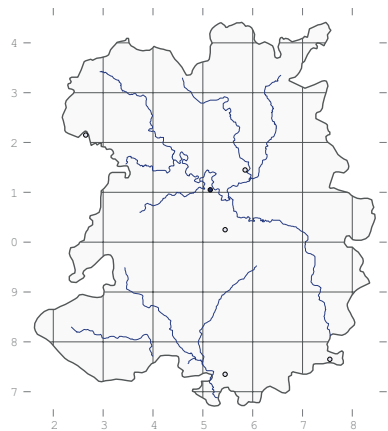
### Pennyroyal

Archaeophyte. Rare. Casual. Roadsides.

First record: Williams, 1897, 'on Rodington heath, 1897, and Evenwood Common (both since inclosed).'

Formerly widely grown as a medicinal herb and often established on roadsides and commons, where light grazing and trampling produced suitable habitats. Very occasionally it still turns up in these places, as on a footpath along a stretch of the old Severn Valley Railway where it crosses Sutton Road in Shrewsbury (SJ510104, 2002), where it grew in MG1 *Arrhenatherum elatius* grassland.

There are old records of it in 'wet fields near Llanymynech' (J. Evans, 1805); Caynham Camp (in Watson 1835); and in the Wyre Forest (G. Jordan, 1856). Two records given in Sinker's Flora should be treated as dubious.



## *Salvia pratensis* L.

### Meadow Clary

Recorded in Leighton (1841) at Fox Farm (W.P. Brookes, SHY) and at Oakly Park (H. Spare). A garden escape in both cases.

## *Salvia verbenaca* L.

### Wild Clary

Native. Rare. Casual. Churchyards and gardens.

First records: Williams, c. 1800, 'side of the Bridgnorth turnpike under the wall of St Giles Church, Shrewsbury' and 'side of footpath through St Mary's Fields, Shrewsbury.'

Occasional, but present in Shropshire only as a garden escape, mainly in Bridgnorth (W.E. Beckwith, 1880 – R.S. Lucas, 1944) and Shrewsbury. The only recent record is from a road verge in Shrewsbury (SJ503119, J. Martin, 1990) where it was introduced as part of a landscaping scheme, but it has not been recorded there since.

## *Salvia verticillata* L.

### Whorled Clary

A casual on a railway bank at Buildwas (J.C. Jinks, 1911, SHY), where it spread for a while, causing J.C. Melvill (Record of Bare Facts 29, 1920) to write 'its exuberance of growth has caused it to occupy much ground, thus aiding it in stamping out certain more delicate aliens struggling for life in the same quarters.' The only recent record is of a large patch by the railway at Walton (SO47037823, P.R. & I.P. Green, 2009).

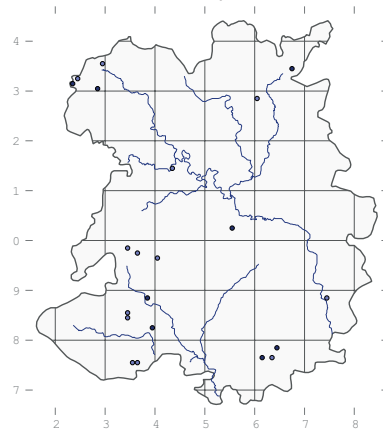
## Phrymaceae

## *Mimulus moschatus* Douglas ex Lindley

### Musk

Neophyte. Scattered. Casual. Gardens, river banks.

First record: C.M. Dony, 1949, 'roadside marsh on the Knolls, Stiperstones' (LTN).



A garden escape, naturalised in some places close to gardens. It is described as growing in great quantity by a stream at Cefn Canol (SJ235310, M.E. Roberts, 1980-1993), by a stream at Doddington (SO614762, E. Heywood-

Waddington, 1980 – J. Bingham, 1997) and in a ditch behind Oakhurst Cottages (SJ286307, E.M. Hignett, 1980 – Roberts, 1993).

### *Mimulus guttatus* DC.

#### Monkeyflower

Neophyte. Local. Stable. Rivers, streams, ditches ponds and canals.

First record (as *M. luteus*): Miss Lloyd, 1879, 'banks of river, Preston Montford,' det. E.M. Rutter, SHY.

Occasional on the banks of rivers and canals, mostly along streams in the hills but also by ponds and canals in the lowlands. Good places to look for it include in Carding Mill Valley, where it has been known since 1894 (E.S. Cobbold) and along the Prees Branch Canal (E.M. Rutter, 1957). Most of the populations of Monkeyflower in Shropshire are *M. guttatus*. It occurs high on some of the hills, at 270 m at Bilbatch (SO400967, R. Green, 1998) and above 280 m on Titterstone Clee (SO6078, E. Heywood-Waddington, 1977).

### *Mimulus × robertsii*

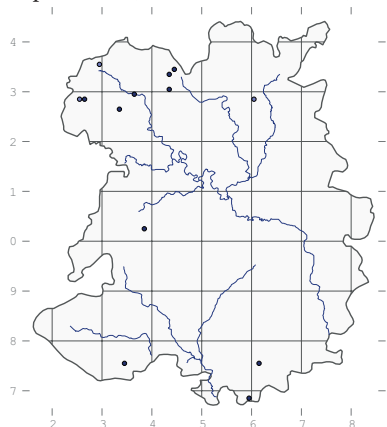
#### Silverside

#### Hybrid Monkeyflower

Neophyte. Scarce. Stable. Streams, canals, rivers.

First record (as *M. luteus*): E.M. Rutter, 1955, 'Llanforda, Candy Valley.'

True *Mimulus luteus* L. has never been confirmed in Shropshire, and all specimens of plants with blotched flowers have turned out to be *× robertsii*, so here we have treated records of *luteus* since 1950, including those in Sinker (1985) as the hybrid. There are recent records of it on the Stiperstones near Lordshill, in various places along the Montgomery Canal, at Crose Mere, Bucknell Hill (J. Bingham, 2004), Cole Mere, and by the Teme at Tenbury Wells. This is the more likely taxon to be encountered at higher altitudes – up to about 340 m on the Stiperstones (SJ380021, 1997, BIRM).



## Orobanchaceae

[*Melampyrum cristatum* L., Crested Cow-wheat

In 1817 Thomas Purton listed this as occurring in 'woods in Shropshire, very rare.' This was queried by Watson in 1835, and was surely a mistake for *M. pratense*, which he did not record.]

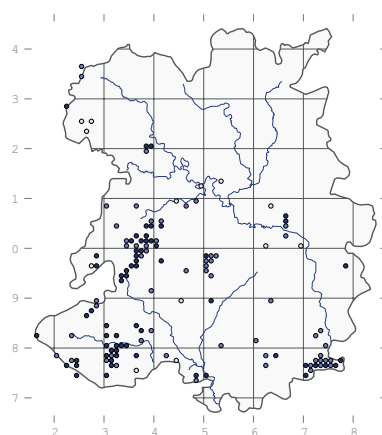
### *Melampyrum pratense* L.

#### Common Cow-wheat

Native. Local. Stable. Axiophyte: woods and moorland.

First record: Williams, c. 1800, 'woods, not uncommon. Haghmon Hill etc.'

Typical of acid oak woods such as W16 *Quercus petraea* at Poles Coppice (Trueman, 1981) and W17 *Leucobryum glaucum* at Vron Wood, but sometimes in more calcareous sites such as at Lydebrook Dingle (Packham, 1992) and by the Borle Brook near Highley (W.A. Thompson, 1981). Apart from the woodland populations it also grows in upland heaths such as H9 *Deschampsia flexuosa* on the Stiperstones.



[*Melampyrum sylvaticum* L., Small Cow-wheat

There was much confusion between *M. pratense* and *M. sylvaticum* in the 19<sup>th</sup> century, and records given in Leighton (1841) and elsewhere are best regarded as errors for *M. pratense*.]

### *Euphrasia officinalis* L.

#### Eyebright

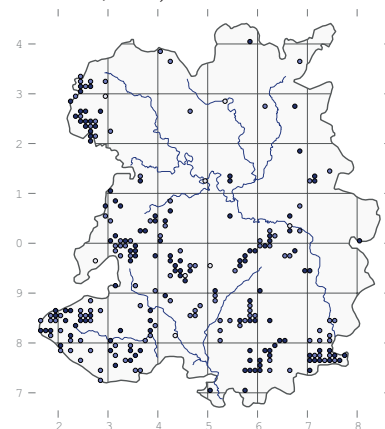
Native. Local. Stable. Axiophyte: grassland.

First record: Williams, c.1800, 'pastures, common.'

Eyebrights cannot be reliably recorded to species in the field, so *E. officinalis* is usually used as an aggregate, although strictly speaking it includes only the taxa formerly referred to as *E.*

*rostkoviana* and *E. anglica*, which are now subspecies.

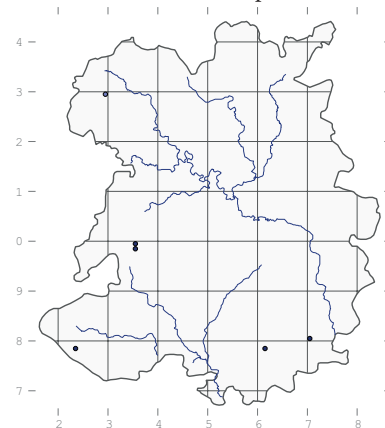
It is often recorded in calcareous to neutral grasslands, specifically CG2 *Avenula pubescens* in Ballstone Quarry, Craig Sychtyn, Llanymynech Rocks and Windmill Hill; CG3 *Bromopsis erecta* at Hilltop (D.H. Wrench, 1994); MG5 *Festuca rubra* at Nant-y-Myssels, Clee St Margaret (Wrench, 1995), Vron Wood and elsewhere. It is also recorded in M10 *Carex dioica* at Shirlett Gutter (Trueman, 1980); and on spoil heaps in both OV37 *Festuca ovina* at Snailbeach and U2 *Deschampsia flexuosa* at The Bog (both Trueman, 1981).



### *Euphrasia arctica* Lange ex Rostrup

Native. Stable. Axiophyte: grassland.

On a laneside verge at Oswestry in 1956 (V. Gordon, det. E.F. Warburg); in MG5 *Festuca rubra* grassland in several meadows around Pennerley and Lower Birches, Cleeton St Mary; in a grass ley at Cwm Collo; and along a forestry track in Birchen Park (all Lockton det. A.J. Silverside, BIRM). Plants in upland meadows are *E. arctica* ssp. *arctica*.



### *Euphrasia × murbeckii* Wettst. (*arctica* × *nemorosa*)

Recorded on Windmill Hill (SJ626007, Lockton, 2009, det. A.J. Silverside, BIRM) and Brown Clee (SO595869,

## Vascular plants

Whild, 2011, det. Silverside, BIRM). In the former site it grows in MG5 *Festuca rubra* grassland. Also introduced at Venus Pool (SJ547061, Lockton, 2006 det. Silverside, BIRM) in recently sown meadows using hay from a variety of sites, which did not conform closely to any semi-natural NVC community.

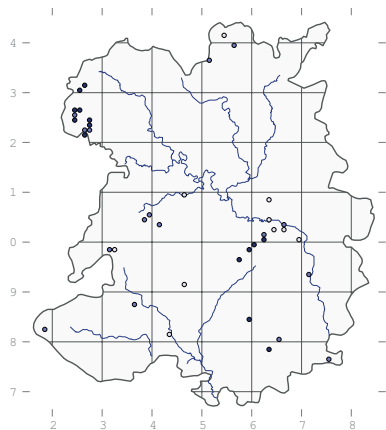
### *Euphrasia nemorosa* (Pers.) Wallr.

Native. Local. Decreasing. Axiphyte: calcareous grassland.

First record: Leighton (det P.F. Yeo, CGE), 1836, 'woods near The Wrekin'.

In limestone grassland in the Oswestry uplands, on Wenlock Edge and around Titterstone Clee. It is recorded in CG2 *Avenula pubescens* in Dolgoch Quarry (SJ277247, Whild, 1998, det. A.J. Silverside, BIRM) and on Llyncllys Hill; CG10 *Helianthemum nummularia* on Llyncllys Hill; MG1e *Centaurea nigra* on Windmill Hill (SJ625007, 2010, det. Silverside, BIRM); and MG5 *Festuca rubra* on Llyncllys Hill.

Although all recent records are from limestone areas, there are older records of it elsewhere. For example, Perring found it on a roadside near Bettws-y-crwyn in 1977 and J.E. Lousley collected it by the Llangollen Canal at Whixall 1936.



### *Euphrasia nemorosa* × *confusa* Pugsley

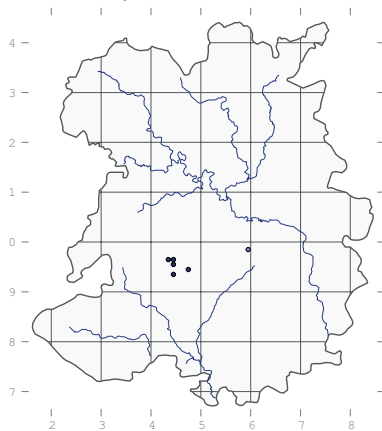
Just one record: on Llyncllys Hill (SJ273236, Lockton & Whild, det. A.J. Silverside, 2007 BIRM).

### *Euphrasia confusa* Pugsley Confused Eyebright

Native. Rare. Axiphyte: grassland

In Townbrook Hollow (H.M. Davidson, det. P.F. Yeo, 1979), where it has been recorded since 1922 (J.C. Melvill) and in other batches on the Long Mynd and Caer Caradoc (J.A. Warren, 1986-1991). Still there in 2011

(J. Mobarak, det. Silverside, BIRM) in MG5 *Festuca rubra* grassland in the valley bottom. There is also an old record for Westwood Quarry (E.M. Rutter, 1962).



### *Euphrasia micrantha* Rchb. Slender Eyebright

Native. Rare. Axiphyte: grassland

This is one of the more common species of eyebright in Britain, occurring on acid heaths and moorland in the west. There is a specimen at Cambridge (det. Yeo) from Dovaston Heath (SJ3421) in 1839, which may have been collected by Leighton. In 1936 R.C.L. Burges collected a specimen on a canal bank at Whixall, either the Prees Branch Canal or the Llangollen. This record was confirmed by H.W. Pugsley. Since then Perring has recorded it on a spoil heap at White Grit in 1975 and H. Webster recorded it at Llanymynech Hill in 1991.

[*Euphrasia scottica* Wettst., Scottish Eyebright

James Cosmo Melvill recorded this species in Carding Mill Valley in 1907, 1909 and 1911. In the latter year the bog had dried out and the plants were very small. It is not known whether any specimens still exist. Although Melvill seemed very positive about the identification, Lloyd & Rutter (1957) considered it doubtful and Sinker (1985) ignored it completely.]

### *Odontites vernus* (Bellardi) Dumort.

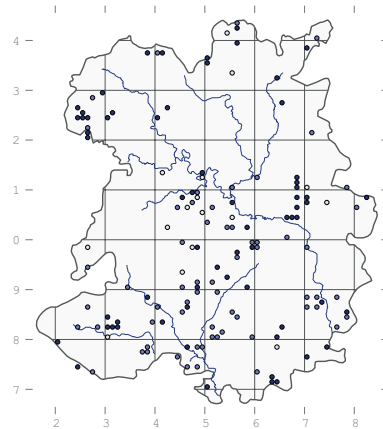
#### Red Bartsia

Native. Widespread. Increasing. Arable fields, tracks, grassland.

First record (as *Bartsia odontites*): Williams, c. 1800, 'pastures and roadsides, common'.

A hemi-parasitic annual of bare ground such as the edges of arable fields and along tracks in farmland.

It is not tolerant of ploughing and does not survive long in a closed grassland sward, so it occupies a rather precarious niche. It is often found in small quantities on the edges of fields, but sometimes it is abundant in resown grassland, such as at Wilderhope in 2005. It has a slight preference for calcareous, well-drained soils. Two subspecies, *vernus* (Bellardi) Dumort. and *serotinus* (Syme) Corbière, have been recorded, but with no obvious difference in their distribution.



### *Parentucellia viscosa* (L.) Caruel

#### Yellow Bartsia

Native. Rare. Casual. Waste ground.

First record: C. Walker, 1983, 'About 6 plants on broken-up airfield runway at Whitchurch Heath, SJ558367'.

An annual hemi-parasite of coastal heaths which occurs only as a casual inland. There are recent records of it by the Montgomery Canal at Keeper's Bridge (SJ351281, C. Tandy, 1998), on nearby Rednal Moss (SJ354272, J. Ing, 1999) and at Wood Lane Gravel Pit (SJ426328, A.P. Dawes, 2008).

### *Rhinanthus minor* L. Yellow-rattle

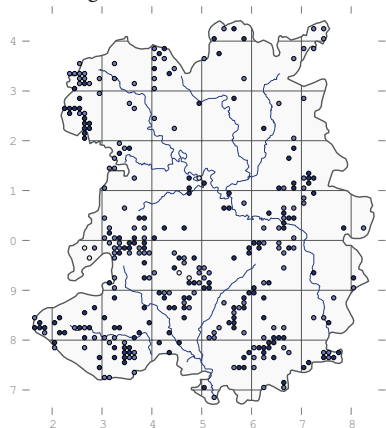
Native. Local. Stable. Axiphyte: grassland.

First record (as *R. crista galli*): Williams, c. 1800, 'meadows, common'.

An annual hemi-parasite of grasslands where it is considered to reduce the vigour of some grasses, leading to increased diversity of the sward. For this reason it is often included in conservation seed mixes, but it is also native in unimproved grasslands, especially in the uplands and on the more base-rich soils. It is recorded in CG2 *Avenula pubescens* at Ballstone Quarry; CG3 *Bromopsis erecta* in a quarry at Stokes's Barn (Trueman, 1981); in MG5 *Festuca rubra* in many places, including Clee St Margaret



(D.H. Wrench, 1995), Cole Mere, Derrington Meadow (Trueman, 1981) and Lubberland (Wrench, 1995); MG6 *Cynosurus cristatus* at Meverley Farm; MG8 *Caltha palustris* in the same place; and in MG10 *Holcus lanatus* in a flush in an unimproved meadow at Brown's Corner (Trueman, 1981). It is not altitudinally limited in the county, being recorded near the summit of Brown Clee (M.B. Fuller, 1984) and much higher elsewhere in Britain.



### *Pedicularis palustris* L.

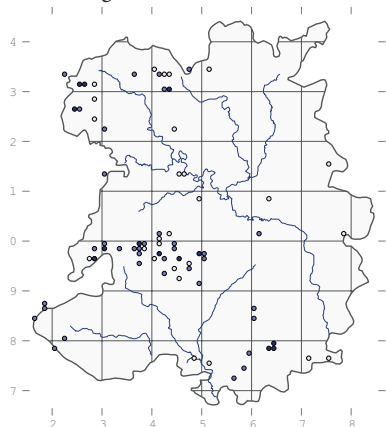
#### Marsh Lousewort

Native. Local. Decreasing. Axiphyte: fens, flushes and stream sides.

First record: Williams, c. 1800, 'bogs, common.'

An annual hemi-parasite of lowland fens and upland flushes. It has been recorded in M23a *Juncus acutiflorus* on Stapeley Hill (Trueman, 1981) and the Stiperstones; M23b *J. effusus* in Gogbatch (C.M. Owen, 1983); and M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981).

It used to occur at Crose Mere (Beckwith, 1882 – Whild, 2003) but it has not been seen since its stand of M22 *Juncus subnodulosus* mire was fenced off and allowed to become overgrown; it still grows in Trefonen Marshes in the same vegetation. The decline is quite marked and is probably continuing.



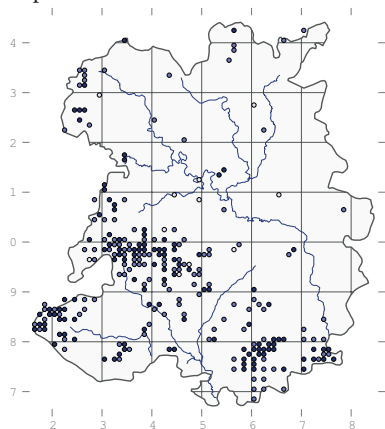
### *Pedicularis sylvatica* L.

#### Lousewort

Native. Local. Stable. Axiphyte: upland flushes, lowland wet heath, acid grassland.

First record: Williams, c. 1800, 'moist pastures in a clay soil, common.'

Occasional in damp acidic grassland, this perennial hemi-parasite is most often found in MG5c *Danthonia decumbens*, as at Cleeton St. Mary, Glasshouse Meadows, Hill Houses and Barnslands Valley (all D.H. Wrench, 1994). It is occasional in M15 *Trichophorum germanicum* at Cramer Gutter, and it has been recorded in M23a *Juncus acutiflorus* on Haughmond Hill. It is also recorded in U5 *Nardus stricta* grassland on Titterstone Clee (A.K. Thorne, 1999) and at Rhos Fiddle. It is not altitudinally restricted in this county, being recorded up to about 440 m on Titterstone Clee (SO595773, Thorne, 1999). Good places to look for it include the eastern slopes of the Stiperstones and at Cramer Gutter.



### *Lathraea squamaria* L.

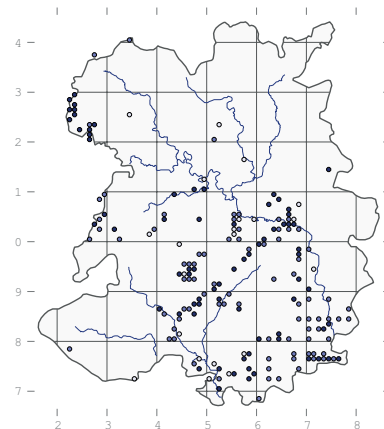
#### Toothwort

Native. Local. Stable. Axiphyte: woods.

First record: J. Evans, 1805, Benthall Edge and 'shrubbery at Bitterley Court, Ludlow.'

Parasitic on the roots of various species. The following have been noted as possible hosts: *Acer pseudoplatanus* at Pontesford Hill (Sinkers & Perring, 1966) and Coalbrookdale; *Corylus avellana* at the Novers (abundant in 1999) and many other places; *Hedera helix* at Benthall (G. Potts, 1936); *Ilex aquifolium* at The Hollies (A.G. Lawson, 1894) and Earl's Hill; *Populus nigra* by the Rea Brook at Cruckmeole (M.G. Hoare, 2000); *Tilia cordata* in Betton Dingle; *T. platyphyllos* at Earl's Hill (R. Gulliver, 1999); *Ulmus* sp. at Stevenshill (W. Beacall, 1905).

It is only recorded in W8 *Fraxinus excelsior* woodland, for example at Harton Hollow, Limekiln Wood and the Novers.



### *Lathraea clandestina* L.

#### Purple Toothwort

In a garden on the Hardwicke estate (SJ510222, A. Johnson, 1991).

### *Orobanchae rapum-genistae*

Thuill.

#### Greater Broomrape

Native. Scarce. Stable. Axiphyte: acid grassland and scrub.

First record: R. Waring, 1770, The Hayes, Oswestry.

A parasite of leguminous shrubs, especially broom and gorse, usually



*Pinguicula vulgaris* (Dan Wrench)



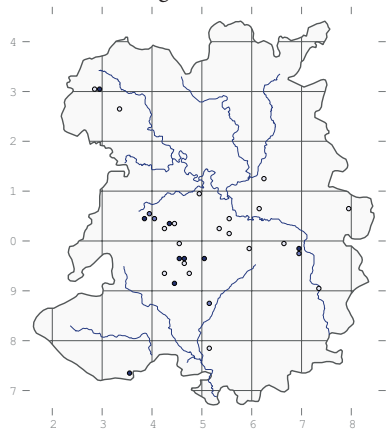
*Campanula poscharskyana*

## Vascular plants

in hedge banks, rough grassland and scrub, often with a southerly aspect. At Old Oswestry it grows in W23 *Ulex europaeus* scrub that is derived from W16 *Quercus petraea* woodland which was cleared in the 1960s and then maintained as grassland by sporadic cutting and grazing. This population first turned up in 1995, when it was found by J.A. Thompson, and is thought not to have been present before that in such a well-known site. Since then numbers have fluctuated from just a few spikes to over 100, depending mainly on the amount of scrub clearance that is taking place.

Similar circumstances prevail near Pontesbury, where it was found in 1990 by Trueman & Whild in scrub at Bank Farm. It disappeared when the scrub was cleared, only to reappear in 2000 on the edge of nearby Poles Coppice. The scrub was subsequently cleared from there, too, and there are currently no *Orobanch* plants present. At some sites, however, it is either very persistent or it reappears: F. Pitt recorded it at Hem Farm in 1915 and it was still there in 2002 (K. Perry).

Longmyndian shales seem particularly favourable for it, and there are numerous records for the Long Mynd, Earl's Hill and Sharpstones Hill. However it is not restricted to such geology, and has been found on the limestone of Wenlock Edge (A. Ley, 1909). Recent sites for it include Pulverbatch (A.K. Thorne, 1999), Worsley (D. Briggs, 2005), Bagbatch (M. Cousins, 2004), Bucknell (T. Holland, 2004) and Ragleth Hill (C. Uff, 2008). There has been no obvious decline. It has been recorded as high as 310 m at Yell Bank (SO507969, J. Mason & P. Knights, 2003).



[*Orobanch elatior* Sutton, Knapweed Broomrape

Recorded on Hope Bowdler by A. Aikin (Turner & Dillwyn 1805) and 'in a clover field at the north-west base of the Wrekin' by E. Lees in 1824 (Leighton 1841).]

### *Orobanch hederac* Duby Ivy Broomrape

Native. Rare.

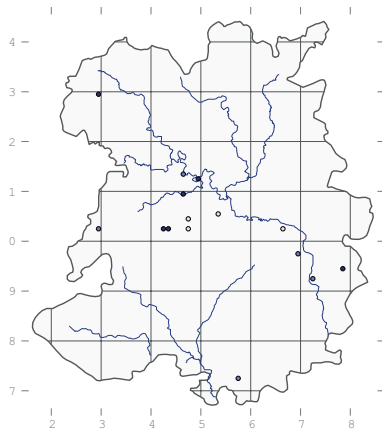
Three spikes in a shrubbery at Benbow Quay, Shrewsbury (SJ493132, Q.J. Groom, 2013).

### *Orobanch minor* Sm. Common Broomrape

Native. Scarce. Casual. Arable fields and gardens.

First record: W.E. Beckwith, 1880, 'in a field of red clover between Berrington and Cound' (SHY).

Parasitic on clover and various other plants, typically in arable fields. It has been known in the Pulverbatch area since 1893 (R.D. Benson), where it occurs in an arable field near Beach Bank (SJ431022, A.K. Thorne, 2005) and in a garden in Church Pulverbatch (SJ429029, Thorne, 1999). It has also been reported recently on waste ground at Hook-a-gate (SJ467095, R.M. Stokes, 1993), in the car park of a supermarket in Oswestry (SJ293295, D. Knight, det. F.J. Rumsey, 2013); in a field of clover at Sutton Mill Farm (SO789941, J. Brown, 1997); and in a shrubbery by shops in Shrewsbury (SJ499120, J. McKelvey, det. I.C. Trueman, 2013).



### *Orobanch ramosa* L. Hemp Broomrape

On potatoes in a garden in Bridgnorth (W.R. Crotch, 1860, CGE) (Hamilton 1909).

## Lentibulariaceae

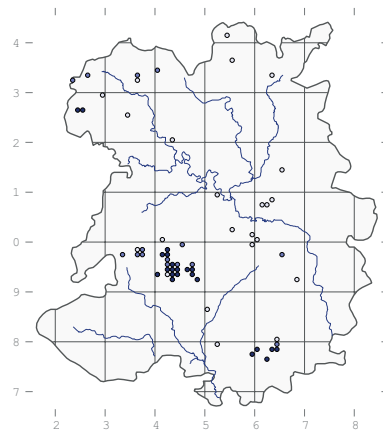
### *Pinguicula vulgaris* L.

#### Common Butterwort

Native. Local. Stable. Axioophyte: base-rich flushes.

First record: L. Brown, 1727, 'near Longmynd'

Restricted to base-rich flushes, mainly in the uplands. It is recorded in M10 *Carex dioica* on Hope Bowdler Hill (P. Eades, 2010) and Shirlett Gutter (Trueman, 1981), and in both M10 *Carex dioica* and M13 *Palustriella commutata* at Trefonen Marshes. It has gone from a number of lowland sites such as Bridgwalton (T. Purton, 1821), Cound Moor (E. Williams, c. 1800), Eyton on the Weald Moors (T.C. Eyton, <1880) and Fox Farm (Williams, c. 1800) but most of the losses were long ago. Good places to look for it include several batches on the Long Mynd, along streams on the east side of the Stiperstones and on Catherton Common.



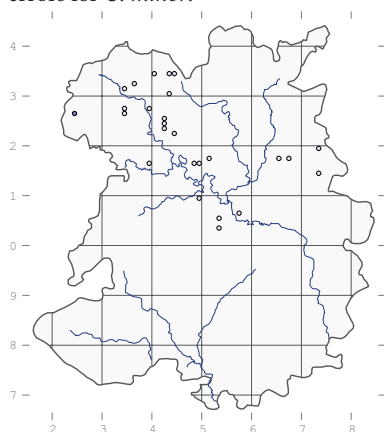
### *Utricularia vulgaris* L. Greater Bladderwort

Native. Last recorded in c.1930. Peaty pools and ditches.

First record: Williams, c. 1800, 'Hencote Pool; in Sir Edward Smith's pool near Eaton Mascott; ditches about Halston; pits about Battlefield'.

On mosses and in pools on nutrient-poor soils. Formerly scattered throughout the plain but long extinct as result of agricultural intensification, pollution and possibly climate change. Apart from Williams's sites, it has been recorded at Bagley Marsh (W. Beacall, 1905), Clarepool Moss (W.E. Beckwith, 1881, BM, SHY), Crose Mere (J.E. Bowman, 1841 – Beacall, 1905), Crudginton Moor (Beckwith, 1882 – W. Phillips, 1897), Fenemere (Beckwith, 1882), Frankton (O.M. Feilden, 1891), Hencott Pool (until Hamilton, 1903), Lilleshall Abbey

(Beckwith, 1892), Lyneal Moss (Feilden, 1891), in the Newport Canal (Beckwith, 1892), Newton Bog (Phillips, 1894), Pitchford (Anon., Hb. A.H. Trow, 1867), Rednal Moss (Leighton, 1841 – Beckwith, 1892), Sharpstones Hill (A. Aikin, 1805), Shrawardine Pool (Beacall, 1905), Snow Pool, Sweat Mere, The Berth (all Beckwith, 1892), the Mere at Ellesmere (Beckwith, 1884, BM), the Weald Moors (R. Anslow, 1865, K), Trefonen Marshes (E. Lloyd, c. 1930), Weston Lullingfields and Westonwharf (both Beacall, 1892 – 1905). Specimens from Clarepool Moss, Rednal Moss and the Weald Moors have been determined recently as *U. vulgaris* s.s. by F.H. Perring, C.D. Preston and P. Taylor but some of the other records could be errors for *U. minor*.



[*Utricularia australis* R.Br.,  
Bladderwort

Identified by A. Bennett in 1924 from a specimen in W.E. Beckwith's herbarium, from an unknown location.]

### *Utricularia minor* L. Lesser Bladderwort

Native. Rare. Stable. Axioophyte: bogs.

First records: Williams, c. 1800, 'Ditch on Shomere Moss; ditches between Queen's-head Turnpike and Woodhouse; pool by the side of the road on Knockin Heath.'

The only current site is on Whixall Moss (SJ495363, D.H. Wrench, 2010), where it was first recorded by Arthur Aikin in 1805. It grows in one peat cutting in some abundance, and pieces have been transferred to other cuttings with mixed success. In the past it has been recorded at Bomere Pool (Leighton, 1835), Clarepool Moss (O.M. Feilden, 1891), Cole Mere and Sweat Mere (both W. Phillips, 1881) and the Mere at Ellesmere (A.H. Wolley-Dod, 1890).

## Bignoniaceae

### *Catalpa bignonioides* Walter Indian Bean-tree

Planted in woodland at Attingham Park (Perring, 1972).

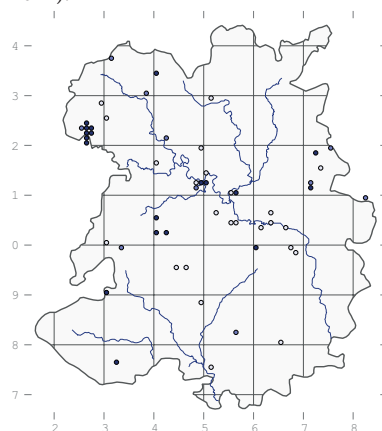
## Verbenaceae

### *Verbena officinalis* L. Vervain

Archaeophyte. Scattered. Stable. Waste ground, roadsides, churchyards.

First record: Williams, c. 1800, 'sides of roads.'

Occasional as a garden throw-out. There are recent records for places such as the quarry edge at Blakeway Coppice, Llynclys Quarry, by the Severn in Shrewsbury, Uckington Heath (J. Ing, 2007), and by the lime kilns at Porth-y-waen (S. Swindells, 2011).



### *Verbena bonariensis* L. Argentinian Vervain

Neophyte. Rare. Gardens and waste ground.

A recent escape from gardens: on a roadside in Frankwell (D.H. Wrench, 2006), by the A5 near Oswestry (B.J. Laney, 2008) and on the towpath of the Severn in Shrewsbury.

## Aquifoliaceae

### *Ilex aquifolium* L. Holly

Native. Widespread. Stable. Hedges, woods, gardens.

First record: W. Withering, 1787, 'the north side of Wrekin Hill... [with] yellow berries.'

Sinker (1985) chose this, as one of the most common and easily identified plants, to act as a proxy for recording coverage. Because it is doubtless present in every tetrad, the lack of a record

would reveal a failure to visit, or at least an inadequate survey. In the event some 45 tetrads in the vice county lacked dots by the end of the project and all of these were indeed due to under-recording. However, that means 95% of tetrads were surveyed to some degree, which is an impressive total.

Holly is common in W21 *Crataegus monogyna* hedges, but it is rarely abundant. It is also a frequent component of the understorey of many woods, including all types of *Alnus glutinosa* woods: W5 at Cole Mere and Oss Mere, W6 at Cole Mere, White Mere and Brown Moss and W7 at Upper Vessons. It is common in W8 *Fraxinus excelsior*, where it has been recorded in all the subcommunities and in many places. However, it is most characteristic of the acid oak woods, where it is sometimes quite abundant, for example in W10 *Quercus robur* at The Ercall; and in both W16 and W17 *Leucobryum glaucum* at Oaks Wood. It seeds itself readily in grassland such as U4 *Agrostis capillaris* at Ditton Mill (D.H. Wrench, 1994), but is quickly eradicated by cutting and grazing.

It is surprisingly palatable to livestock, and it has for centuries been grown on the Stiperstones for winter feed. In some places on the north Shropshire plain, where the agriculture is entirely arable (e.g. at Shray Hill), shrubs grow with almost completely spineless leaves.



### *Ilex × altaclerensis* (Loudon) Dallimore (*aquifolium* × *perado*) Highclere Holly

Neophyte. Rare. Increasing. Parks and gardens.

First record: R.M. Stokes, 1997, Overley Hill (BIRM).

Available in many varieties from nurseries and widely planted in gardens and parks. Sometimes found in semi-wild situations, often where estates have fallen into decay, such as



## Vascular plants

at Cound Hall and at Lady Forester Hospital, Much Wenlock. It is also planted in hedges at Peplow Hall and at Cole Mere.

## Campanulaceae

### *Campanula patula* L.

#### Spreading Bellflower

Native. Scarce. Declining. Roadsides and riverbanks.

First record: J.J. Dillenius & S. Brewer, 1727, 'in sepibus prope Bishop's Castle.'

There are six current sites in Shropshire, all on roadside banks in the south of the county. It was formerly more widespread, but never very common. A.H. Wolley-Dod recorded it on a bank above Knighton in 1894, but complained that he could not find a single specimen in Shropshire or Radnorshire in 1898 or 1899. The only suggestion that it was ever common comes from J. Babington (1803), who boasted that although it was 'not frequently met with in most other counties,' it was 'very common' in the vicinity of Ludlow; but he only gave one locality (Caynham Camp).

It grows on eroded banks below hedges, in W24 *Rubus fruticosus* scrub at Mellin-y-Groque and Pentre-Hodre, and in W23 *Ulex europaeus* scrub at the former site, under a hawthorn

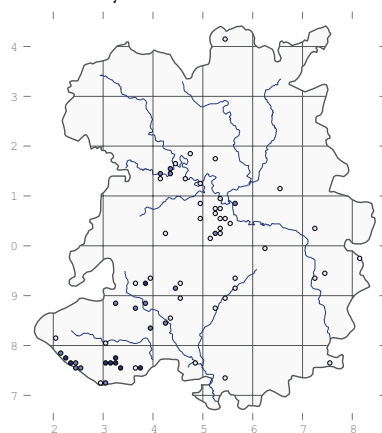


*Arctium minus* (Dan Wrench)



*Centaurea cyanus* (Dan Wrench)

hedge. Comments from old records show that it was always a roadside plant, except for some old records from the banks of the Severn around Shrewsbury.



### *Campanula rapunculus* L.

#### Rampion Bellflower

Just two records: near Montford Bridge (A. Aikin, 1796) and in a plantation near a house on Eaton on the Weald Moors (T.C. Eyton, <1880, formerly in SHY but not there now).

### *Campanula lactiflora*

M.Bieb.

#### Milky Bellflower

Neophyte. Rare.

One plant on the outer wall of Lilleshall Abbey (SJ738143, R.M. Stokes, 2004).

### *Campanula persicifolia* L.

#### Peach-leaved Bellflower

Neophyte. Rare. Increasing. Roadsides, waste ground.

First record: B.R. Fowler, 1980, 'two plants on a roadside verge at Longnor Park, SJ463002.'

A garden escape at Merrington Green (R.M. Stokes, 1993 & D.L. Buckingham, 1999), on a track side at Hope Bagot (I.P. Green, 2009) and on Lilleshall Hill (S. O'Donnell, 2010).

### *Campanula medium* L.

#### Canterbury-bell

A casual in a garden at Meole Brace (J.C. Melvill, 1906) but not persisting.

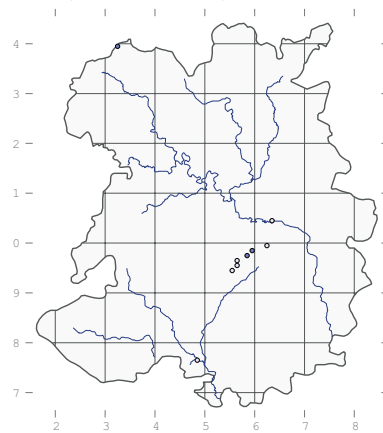
### *Campanula glomerata* L.

#### Clustered Bellflower

Native. Rare. Last recorded in 1935. Roadsides and limestone grassland.

First record: Williams, c. 1800, 'ditch banks about Lutwyck.'

On the very edge of its range in Shropshire, and only dubiously native. It was mostly recorded on roadsides on Wenlock Edge, but there are also records of it on river banks at Bromfield (M. McGhie, 1841) and Coed yr Allt (E.R. Lloyd, 1935).



### *Campanula portenschlagiana* Schultes

#### Adria Bellflower

Neophyte. Rare.

On walls in Kingsland (R.M. Stokes, 1994) and Peplow (2009), barely naturalised.

### *Campanula poscharskyana*

Degen

#### Trailing Bellflower

Neophyte. Rare.

Naturalised in various places around Shrewsbury, including Coton Hill railway sidings (SJ492136, R.M. Stokes, 1995) and the English Bridge, and on a garden wall at Charlton Hill.

### *Campanula latifolia* L.

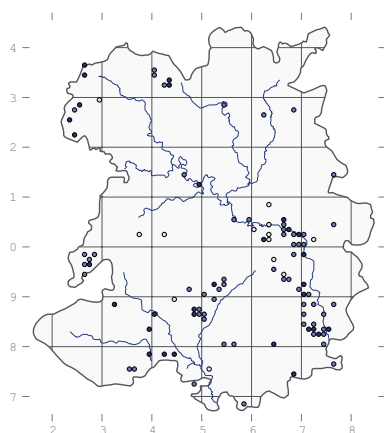
#### Giant Bellflower

Native. Local. Stable. Axioophyte: woods.

First records: Williams, c. 1800, Muckley Cross and a copse near Belswardine.

Largely restricted to woods in the lower Severn, Teme, Onny, Camlad and Borle Brook valleys, with outlying populations elsewhere in the county, some of which probably arose from introductions, as it is quite a widely grown garden plant. It has an unusual distribution in Britain, being common

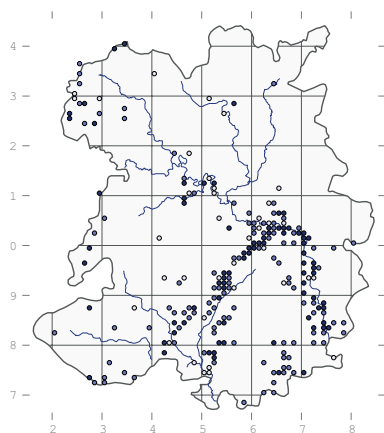
from the Midlands northwards to southern Scotland but absent from the south, west and north. All its native sites are W8 *Fraxinus excelsior* woods, where it often grows close to streams, possibly favouring only half-shade. Elsewhere it usually occurs in hedges on the more base-rich soils, where similar conditions prevail, and it seems to have been increasing in the Oswestry area in recent years. Some of its best sites are along the Borle Brook near Ray's Bridge, at Marrington Dingle, where it has been recorded several times since 1956 (E.M. Rutter), and Thatcher's Wood, where G. Potts first recorded it in 1925.



***Campanula trachelium* L.**  
**Nettle-leaved Bellflower**

Native. Local. Stable. Axiophyte: woods, hedges and grassland.

First record: Williams, c. 1800, 'hedges about Eaton, common.'



Mostly in W8 *Fraxinus excelsior* woods such as Craig Sychtyn (R.A. Dawes, 2000), Redhill Coppice (Trueman, 1981) and Stevenshill, where it often grows on track sides and clearings. Sometimes it spreads into adjacent grassland such as CG3 *Bromopsis erecta* in Lea Quarry. It is largely restricted to the limestone districts and the valleys of the main rivers such as the Severn at its confluence with the Worfe (W.E. Hutton, 1979) and the Dee at Coed yr

Allt (P. Parker, 1992). Good places to look for it include Benthall Edge and Blakeway Coppice.

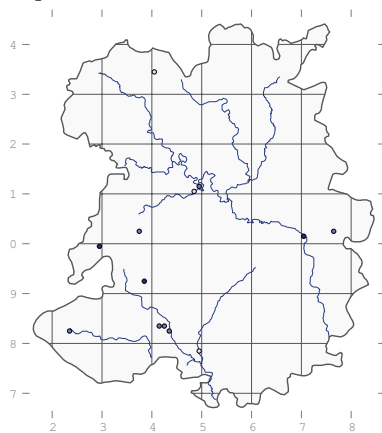
***Campanula rapunculoides* L.**

**Creeping Bellflower**

Neophyte. Rare. Stable. Gardens and roadsides.

First record: 1891, 'Ellesmere' (Diamond 1891).

Formerly grown in gardens, where it is unpopular because it spreads vigorously. Very occasionally it becomes established in the wild, usually on roadsides near gardens, where it does not persist. In 1906 and 1909 J.C. Melvill reported it as spreading in Meole Brace, describing it as 'an objectionable plant once it has introduced itself and got hold in cultivated ground,' but it was never recorded there again. The only recent record is from Middleton-in-Chirbury church (J.A. Thompson, 1999), where it has been known since 1986 (J.M. Roper).



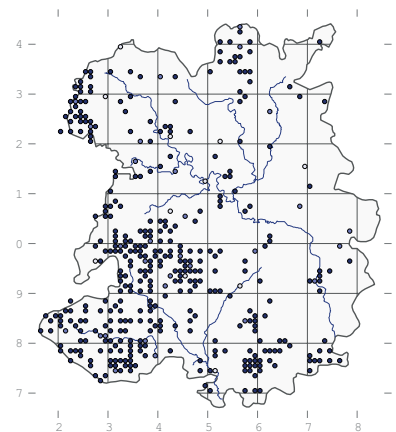
***Campanula rotundifolia* L.**  
**Harebell**

Native. Local. Stable. Upland grassland.

First record: Williams, c. 1800, 'ditch banks, common; also var. with white flowers.'

Occasional in upland grassland, in calcareous communities such as CG2 *Avenula pubescens* at Blackbridge Quarry, Jones's Rough, Llanymynech Rocks (Trueman, 1981) and Moelydd; CG3 *Bromopsis erecta* at the Foxholes; CG7 *Thymus polytrichus* at Moelydd and Presthope; and CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Minton Batch (R. Tapper, 1983). It also occurs in many stands of MG5 *Festuca rubra* grassland including at Nantmawr (Trueman, 1981), the Foxholes, Hayton's Bent (D.H. Wrench, 2005) and Vron Wood; in U1 *Rumex*

*acetosella* grassland at Haughmond Hill and Stapeley Hill; in U4 *Agrostis capillaris* in Cwm Collo, at Shelve (Trueman, 1981) and on Brown Clee; and in U5 *Nardus stricta* at Skilver (Trueman, 1981). On mining spoil at Snailbeach it has been recorded in OV37 *Festuca ovina* and on rock outcrops at Holloway Rocks in OV39 *Asplenium trichomanes* (both Trueman, 1981). Sometimes it persists in open W8 *Fraxinus excelsior* scrub, as at Blodwel Rocks (Trueman, 1981).



***Legousia hybrida* (L.)**

Delarbre

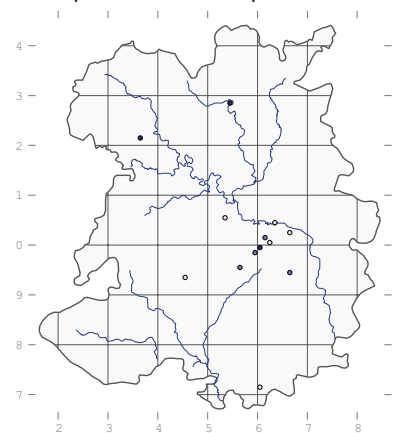
**Venus's-looking-glass**

Archaeophyte. Rare. Casual.

Axiophyte: field margins and waste ground.

First record (as *Campanula hybrida*): Williams, 1800, 'corn-field near the Gouter upon the estate of E. Williams Esq., Eaton Mascott, 1800.'

Occasional as a weed in corn fields and on roadsides, possibly brought in on farm vehicles and never really persisting. There are recent records for Brockhurst Farm ('one plant in the farmyard,' D.L. Buckingham, 2000), a field on Wenlock Edge above Blakeway Hollow ('abundant,' R.J. Swindells, 2000), Knockin Heath ('five plants in a field by the A5,' B.J. Laney, 2008).



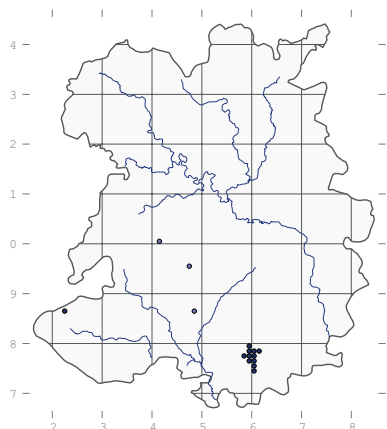
## *Wahlenbergia hederacea* (L.) Rchb.

### Ivy-leaved Bellflower

Native. Scarce. Stable. Axiophyte: upland flushes.

First record (as *Campanula hederacea*): Williams, c. 1800, 'north side of Titterstone Clee hill, towards the bottom.'

Locally abundant on Titterstone Clee, in about 20 different places, most of which are described as along streams or in flushes. Some of the records show that it also occurs in grassland in some places. The only other current site is by a stream in the Clun Forest (SO224865), where it was found by A.K. Thorne in 2002. Elsewhere it has been recorded on Caer Caradoc (G.M. Furley, 1922), Cothercott Hill (SJ417007, B.R. Fowler, 1980) and 'the Bishops Covert, Delbury' (G. Potts, 1922). Up to about 460 m on Titterstone Clee.



## *Jasione montana* L.

### Sheep's-bit

Native. Local. Stable. Axiophyte: upland grassland.

First record: Williams, c. 1800, 'dry hedge banks and hilly pastures, common.'

Rather scarce, in U1 *Rumex acetosella* grassland on Earl's Hill, on the Long Mynd, at Pulverbatch Castle and on the Lump, Priestweston. Possibly also in other acid grassland types and sometimes on woodland edges. There are as many sites for it now as in Sinkers' Flora. It does seem to have gone from several hills in the north of the county, such as Grinshill Hill (Leighton, 1841 – W.E. Beckwith, 1880) and Stevenshill (Beckwith, 1892). An isolated site for it on the plain is Prees Heath, where it is rather rare, also in U1 grassland.

## *Lobelia erinus* L.

### Garden Lobelia

Neophyte. Rare. Casual. Waste ground.

A common garden plant from South Africa that is occasionally found as a casual, not far from gardens or hanging baskets. It was first recorded by R.A. Dawes in 1999, growing in gaps in the pavements in Oswestry. There are subsequent records from the car park by the Montgomery Canal at Queen's Head (R.M. Stokes, 2001) and the towpath of the Severn in Shrewsbury.

## *Lobelia dortmanna* L.

### Water Lobelia

Native. Rare. Last recorded in 1920. Pools.

First record: Williams, 1791, 'round Bomere Pool near Condoover, plentifully.'

In oligotrophic pools, long since gone but formerly present at Berrington Pool (Williams, c. 1800 – Hamilton, 1893), Blake Mere (Williams, c. 1800 – O.M. Feilden, 1920), Bomere Pool (last recorded by J.C. Jinks, 1911, SHY), Newton Mere (W.E. Beckwith, 1880) and White Mere (Williams, c. 1800 – A. Ley, 1882, BIRM). There are also unconfirmed and rather unconvincing records for Marrington (A.R. Horwood, 1901), 'small pools on the Stiperstones range' (G.M. Furley, 1922) and 'shallow pools on the Longmynd' (W. Corbett, 1841).

## *Pratia angulata* (G. Forst.)

Hook. f.

### Lawn Lobelia

Neophyte. Rare.

'Spontaneous in a lawn' in Harmer Hill (J.A. Thompson, 2009) and naturalised on mown grass in Albrighton in 2011.

## Menyanthaceae

## *Menyanthes trifoliata* L.

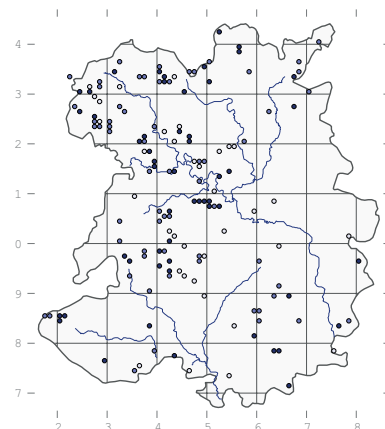
### Bogbean

Native. Local. Stable. Axiophyte: pools and swamps.

First record: Williams, c. 1800, 'pits and ponds, common.'

In a variety of wetlands, including M22 *Juncus subnodulosus* fen at Sweeny Fen (A. Hillman, 1992); M23 *Juncus effusus* on the margin of Ebnaal Pool (Trueman, 1981); S5 *Glyceria maxima* at Blake Mere; S12 *Typha latifolia* at Shrawardine Pool and Brown Moss; S13 *T. angustifolia* on the margin of Bomere Pool; S14 *Sparganium*

*erectum* at Brown Moss; S27 *Comarum palustre* at Berrington Pool (M.J. Wigginton 1979), Brown Moss, The Moors, Shomere Pool (Wigginton, 1979) and Shrawardine Pool; and W5 *Alnus glutinosa* carr at Shomere. It is sometimes introduced into garden ponds, where it can thrive for a while, but it does not seem to establish well in the wild. One of the best places to see it is on the SE shore of the Mere, where a large floating mat extends for many metres over the water.



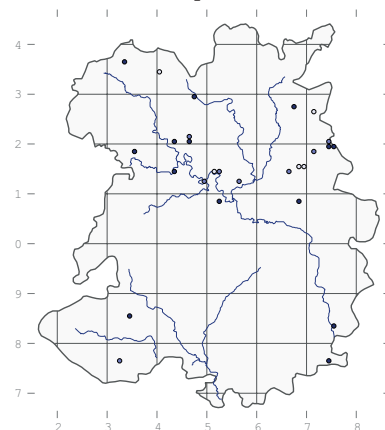
## *Nymphoides peltata* Kuntze

### Fringed Water-lily

Native. Scattered. Increasing. Canals and ponds.

First record: W.E. Thompson, 1898, 'canal at Pimley, Uffington.'

Originally spreading into the county via the canal network, but now widely introduced into garden and fishing ponds. There are recent records of it in places like the Newport Canal, a new fishing pond at St Martin's and the lake at Walcot Park (J. Clayfield, 2009). Although this plant has native status in some parts of Britain, it is only ever introduced in Shropshire.





## Asteraceae

***Echinops bannaticus*** Rochel  
ex Schrad.

### Blue Globe-thistle

Neophyte. Rare. Stable. Gardens and road verges.

This is the commonest species of globe-thistle, first recorded on a road verge at Lyth Hill (SJ472068) by K.K. Bell in 2013, but it was probably also this species on a verge at Cockshutt (SJ436285, R.M. Stokes, 2007) and planted at Stokesay Castle (SO436817, J.A. Thompson, 1995).

### *Carlina vulgaris* L.

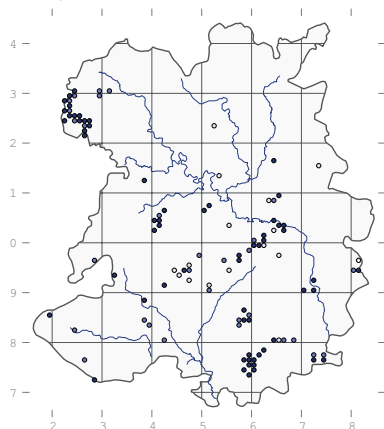
#### Carline Thistle

Native. Local. Declining. Axioophyte: quarries, limestone and heathy grassland.

First record: Williams, 1800, 'sandy heaths, common'.

Found typically in short, disturbed limestone grassland in quarries and on thin soils and rocky exposures. Nationally this species has declined since 1950 and it appears that its main threat other than habitat destruction in Shropshire is succession due to lack of grazing; as a short-lived monocarpic perennial, a ready supply of regeneration niches are essential for its survival.

Characteristic of limestone grassland communities such as CG2 *Avenula pubescens* at Llanymynech Rocks, Blackbridge Quarry and Craig Sychtyn; CG10 *Helianthemum nummularia* at Cornbrook, and CG7 *Thymus polytrichus* at Moelydd and Farley Quarry. It is not confined to limestone grassland and is also found in sandy disturbed habitats which have some calcareous influences such as U1 *Rumex acetosella* which is typical in Shropshire of south facing eroded or rocky slopes that are severely droughted in the summer. *C. vulgaris* is found in U1 at Earl's Hill and also in U4 *Agrostis capillaris* on Brown Clee.



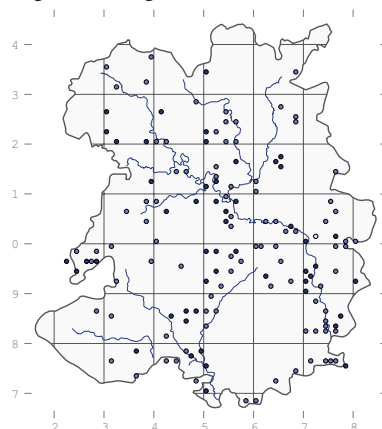
### *Arctium lappa* L.

#### Greater Burdock

Archaeophyte. Local. Stable. Riversides, arable fields, woods.

First record: W.H. Painter, 1894, Sutton Maddock.

Leighton (1841) recorded *A. lappa* L. (Common Burdock) and *A. bardana* Willd. (Woolly Burdock) but we would now consider these to be varieties of *A. minus*. *Arctium lappa* is rarer. It grows in river floodplains, often in W6 *Salix* × *fragilis* woodland (e.g. by the Worfe at Beckbury), or sometimes in arable fields. As a short-lived monocarpic perennial, it needs bare soil for recruitment. At Robertsford it grows on the margins of rape fields close to the river. It is a south-easterly plant in Britain, with Shropshire close to the edge of its range.



### *Arctium* × *nothum* (Ruhmer) J. Weiss (*lappa* × *minus*)

#### Hybrid Burdock

Native. Rare. Stable. Arable fields.

A small population on the edge of an arable field at Pennyrush near Weston Lullingfields (SJ412265, P. Parker, 1999, conf. Perring); still there in 2008.

### *Arctium minus* (Hill) Bernh.

#### Lesser Burdock

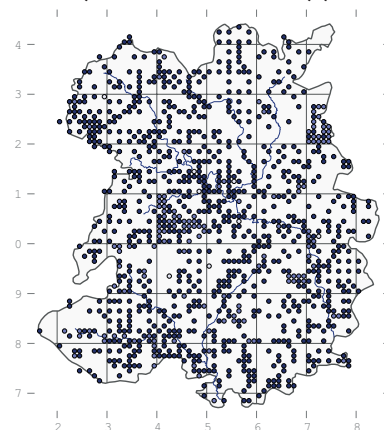
Native. Widespread. Stable. Woods, waste ground, field margins and river banks.

First record (as *A. lappa*): Williams, c. 1800, 'hedges and waste places, common'.

On bare or disturbed ground on the sides of tracks in woods and beside arable fields, the tops of river banks and waste ground in gardens. It is recorded in OV25 *Cirsium arvense* field margins at Kingshead; W5 *Alnus glutinosa* woodland at Cole Mere; W6d *Sambucus nigra* by the Severn in Shrewsbury and Shelton Rough; W8 *Fraxinus excelsior* at Blakeway Coppice,

Blodwel Rock (Trueman, 1981), New England and elsewhere; and W24 *Rubus fruticosus* scrub at High Rock, Bridgnorth (Trueman, 1981). It occurs up to about 350 m at The Park, Clee Hill (J. Clayfield, 2006).

There is some confusion about its taxonomy. *Arctium nemorosum* Lej. was formerly considered a subspecies and has been recorded occasionally (e.g. at Attingham Park by Perring in 1972) but there are no recent or confirmed records; *A. minus* ssp. *pubens* (Bab.) P. Fourn. appears to be widespread; ssp. *minus* has not been formally recorded in the county yet.



### *Carduus tenuiflorus* Curtis

#### Slender Thistle

Native. Rare. Casual. Roadsides and waste ground.

First record: Williams, 1800, 'ditch banks around the old limestone quarry near Harnage'.

A coastal species with only scattered populations inland. It was reported to be still present at Harnage in 1975 (SJ566042, P. Parker) and has been recorded by the A5 at Queen's Head (E.D. Pugh, conf. P.M. Benoit, 1968); on nearby Knockin Heath (SJ358215, R.M. Stokes, 1994); and by the canal at Whitchurch (SJ532414, J. Hooson, 1993).

### *Carduus pycnocephalus* L.

#### Plymouth Thistle

A rare, wool shoddy alien, recorded at Conover in 1907 by H.M. Auden (*Record of Bare Facts* 17, 1908).

### *Carduus crispus* L.

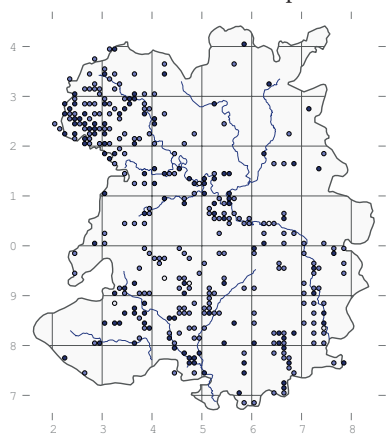
#### Wetted Thistle

Native. Frequent. Stable. Arable fields, waste ground, river banks.

First record: Williams, 1800, 'hedges, common'.

A biennial of disturbed habitats, often slightly calcareous. It is recorded in

M22 *Juncus subnodulosus* at Trefonen Marsh and Morton Pool, and W8 *Fraxinus excelsior* in Redhill Coppice (all Trueman, 1981), but it is more common in arable fields and pastures.



### *Carduus × stangii* H. Buek ex Nyman (*crispus* × *nutans*)

Probably not a rare hybrid. It has been recorded at Cruckmeole (SJ429029, D.H. Wrench, BIRM), on Sharpstones Hill (SJ494090, 2005, BIRM), Ellerton Farm (SJ720276, 2007, BIRM) and Hallclose Coppice (SO7583, N.P. Jones, 2011). It was listed by Lloyd & Rutter (1957) for Botanical Division VIII (the Shrewsbury area) but without details.

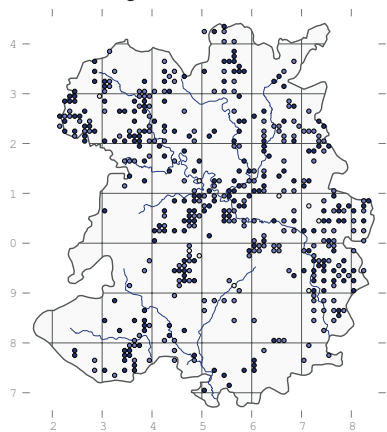
### *Carduus nutans* L.

#### Musk Thistle

Native. Frequent. Stable. Disturbed roadsides, calcareous grassland, arable fields, limestone quarries.

First record: Williams, 1800, 'pastures, clover fields, ditchbanks, common'.

In closely grazed calcareous or, sometimes, neutral grassland, roadsides, quarries, arable fields and other marginal vegetation. It is predominantly a lowland species, although it has been recorded on the Long Mynd and also at Llyn Rhyddwyn. The only recorded quadrat is for OV23 *Dactylis glomerata* on a roadside verge at Cosford.



### *Cirsium eriophorum* (L.)

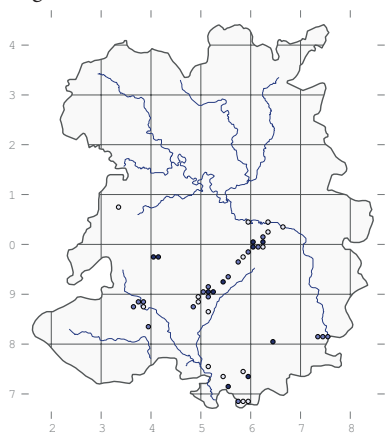
Scop.

#### Woolly Thistle

Native. Scarce. Declining. Axiophyte: limestone grassland.

First record: Williams, 1800, 'about Buildwas Mill'.

In calcareous grassland, sometimes in areas where there has been some disturbance, such as in quarries and along tracks. It occurs in MG1e *Centaurea nigra* grassland on a track side at Roman Bank; and MG5 *Festuca rubra* at Windmill Hill and Pudding Bag.



### *Cirsium vulgare* (Savi) Ten.

#### Spear Thistle

Native. Common. Stable. Roadsides, river banks, arable fields, grassland.

First record: Williams, 1800, 'ditch banks and waste places, common'.

A widespread and common biennial found in a wide range of habitats wherever the nutrient status is high and there is sufficient disturbance for recruitment. It is found in CG3 *Bromopsis erecta* at Lea Quarry; MG1c *Filipendula ulmaria* by the Severn in Shrewsbury; MG5 *Festuca rubra* at Pudding Bag, Stretton Westwood (D.H. Wrench, 1995), Llanhowell (Trueman, 1981) and elsewhere; MG9 *Deschampsia cespitosa* at Oss Mere; M22 *Juncus subnodulosus* at Trefonen Marshes (Trueman, 1981); M23 *Juncus effusus* at Gogbatch (C.M. Owen, 1983); M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983); U1 *Rumex acetosella* at Prees Heath and Titterstone Clee (A.K. Thorne, 1999); and U4 *Agrostis capillaris* on Brown Clee.

It is common on disturbed soils such as OV10 *Senecio vulgaris* waste ground at Shifnal; OV13 *Capsella bursa-pastoris* waste ground at Priorslee (both Trueman, 1981); OV15 *Anagallis arvensis* at Filletts Farm;

OV19 *Tripleurospermum inodorum* on a roadside at Tong (Trueman, 1981); OV25 *Cirsium arvense* field margins at Kingshead and Norton, Stockton (Trueman, 1981); OV26 *Epilobium hirsutum* in felled woodland at Bomere Pool; OV28 *Agrostis stolonifera* tracksides in Withybed Wood (J. Bingham, 1986); OV30 *Bidens tripartita* on the edge of Marton Pool, Chirbury (M.J. Wigginton, 1979); and OV31 *Rorippa palustris* on mud at Venus Pool.

It is much rarer in swamps and is only recorded in S14 *Sparganium erectum* at Brown Moss and S28 *Phalaris arundinacea* at the Moors, Ellesmere. It is not common in woods, but it is found in W5 *Alnus glutinosa* at Black Coppice.



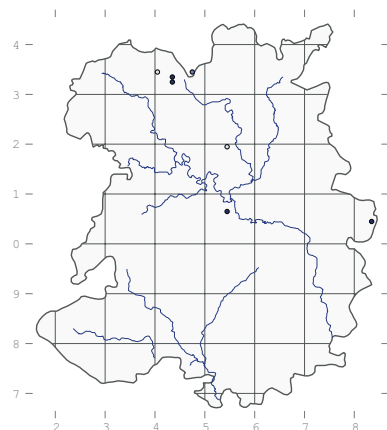
### *Cirsium dissectum* (L.) Hill

#### Meadow Thistle

Native. Rare. Stable. Axiophyte: fen meadows.

First record: J.E. Bowman, 1835, 'Ellesmere'.

On the edges of bogs and in wet meadows on peat. It occurs only in M24 *C. dissectum* meadows such as Yell Meadow at Cole Mere, where it was first recorded by N.P. Jones in 1993. It has also been recorded in a site at Beamish (SJ832044, B.R. Fowler, 1986) and as an introduction at Venus Pool (SJ548062, R.M. Stokes, 2005).



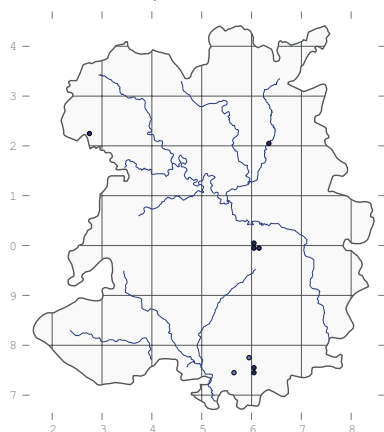


***Cirsium acaule* (L.) Scop.****Dwarf Thistle**

Native. Scarce. Increasing. Axiophyte: calcareous grassland.

First record: E.D. Pugh, c. 1970, Llanymynech Hill.

In limestone grassland on warm, south-facing slopes. It is still present on Llanymynech Hill (D. Guest & S. Smith, 1997), in a place close to the border, where it grows in what they considered to be CG2 *Avenula pubescens* grassland. It first turned up on Titterstone Clee at Knowbury in 1977 (C. Raikes), and has since spread to the Cornbrook area where it was abundant (thousands of plants) in 1997 (J. Bingham). The vegetation here is CG10 *Helianthemum nummularia* (Trueman, 1981). A third site was found on Wenlock Edge at Stokes's Barn by R.M. Stokes in 1994, and it has since been recorded in a quarry off Blakeway Hollow (Stokes, 1996). At Cold Hatton Heath it was found in 1991 (A. Ashwell) on some dumped soil, and it could be considered an introduction there, unlikely to persist. At Titterstone Clee it has been recorded at an altitude of 440 m, in a site above Horseditch (SO595773, Trueman, 1980).

***Cirsium palustre* (L.) Scop.****Marsh Thistle**

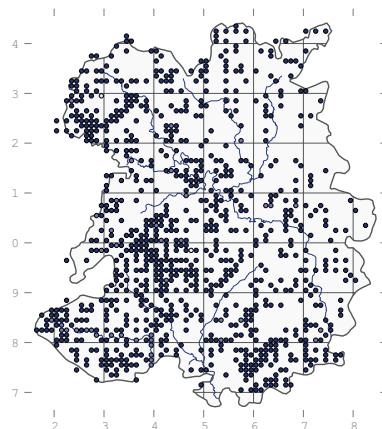
Native. Common. Stable. Rush pasture, upland flushes, moorland, ditches, riverbanks.

First record: Williams, 1800, 'moors, moist meadows and sides of ditches, common'.

In fens, damp pasture, moorland and on river banks in wet woodland. It is found in a wide range of grasslands, including MG5 *Festuca rubra* in many places; MG6 *Cynosurus cristatus* at Molverley Farm, Ruewood and Wilderhope; MG8 *Caltha palustris* at Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* at Cole Mere

and Crose Mere; MG10 *Holcus lanatus* at Hope Coppice and Ruewood; U4 *Agrostis capillaris* on Brown Clee; and U5 *Nardus stricta* on Titterstone Clee (Trueman, 1981).

It is also common in fens and mires such as M4 *Carex rostrata* at Snipe Bog; M6 *C. echinata* at Upper Darnford (R. Tapper, 1983); M10 *C. dioica* on Hope Bowdler (P. Eades, 2010), Shirlett Gutter (Trueman, 1980), Trefonen Marshes and elsewhere; M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010), Hope Bowdler (Eades, 2010) and Trefonen Marshes; M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Crofts Mill (C. Walker, 1994), Crose Mere, Sweeny Fen and elsewhere; in many stands of M23 *Juncus effusus* and M23a *J. acutiflorus* throughout; M24 *Cirsium dissectum* at Black Coppice and Cole Mere; in all stands of M27 *Filipendula ulmaria*; M29 *Potamogeton polygonifolius* in Callow Hollow; M35 *Montia fontana* in Carding Mill Valley, Lightspout Hollow and Wild Moor (the last four by R. Tapper, 1983); and M36 *Chrysosplenium oppositifolium* at Poles Coppice.



In swamps and pond margins it is recorded in OV26 *Epilobium hirsutum* at Berrington Pool (M.J. Wigginton, 1979); OV28 *Agrostis stolonifera* track sides in Withybed Wood (J. Bingham, 1986); OV30 *Bidens tripartita* around Marton Pool, Chirbury; OV31 *Rorippa palustris* at Brown Moss; S3 *Carex paniculata* at Fenemere (C. Walker, 1988); S14 *Sparganium erectum* at Brown Moss; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* in a ditch near Cole Mere; and both S27 *Comarum palustre* and S28 *Phalaris arundinacea* at the Mere.

Sometimes it is found in woods such as W1 *Salix cinerea* at the Mere; W5 *Alnus glutinosa* along the Bailey Brook at Millenheath and around many of the meres; W6b *Salix × fragilis* by

the Mere and W6d *Sambucus nigra* by the Severn in Shrewsbury; W6e *Betula pubescens* at Brown Moss; W7 *Lysimachia nemorum* at Brook Vessons and Fastings Coppice; and a wet W8 *Fraxinus excelsior* wood at Wilderhope.

***Cirsium arvense* (L.) Scop.****Creeping Thistle**

Native. Common. Stable. Grassland, roadsides, river banks, arable margins.

First record: Leighton, 1841, 'fields and waysides; common'.

In a wide range of habitats, where it is usually an indicator of eutrophic conditions, and is a notifiable weed under the 1959 Injurious Weeds Act. It occurs in a wide variety of habitats but is most abundant in grassland such as CG3 *Bromopsis erecta* at Hilltop (D.H. Wrench, 1994); CG7 *Thymus polytrichus* in Farley Quarry; MG1 *Arrhenatherum elatius* at Brandwood, Wenlock Edge car park and many other places; MG5 *Festuca rubra* at Haughmond Hill, Pudding Bag and elsewhere; MG6 *Cynosurus cristatus* at Cramer Gutter, Earlsdale and Molverley Farm; MG9 *Deschampsia cespitosa* at Crose Mere at Hill Houses; OV23 *Dactylis glomerata* on road verges at Cosford (Trueman, 1981) and Monkmoor; U1 *Rumex acetosella* at Prees Heath; and U4 *Agrostis capillaris* at Cwm Collo and Rhos Fiddle.



*Cirsium dissectum*



In fens and mires it is found in M22 *Juncus subnodulosus* at Sweeny Fen and Crose Mere (Trueman, 1981); M23 *J. effusus* at Bomere Pool and Ebnal Pool (Trueman, 1981); M27 *Filipendula ulmaria* in Tunstall Wood; S7 *Carex acutiformis* in the Old River Bed; S12 *Typha latifolia* at Berrington Pool; S18 *C. otrubae* at the Speller; S24 *Calamagrostis canescens* at Fenemere (M.J. Wigginton, 1979); and S26 *Phragmites australis* in a ditch near Crose Mere.

Occasionally it is found in wet woodland such as W1 *Salix cinerea* at Berrington Pool; W5 *Alnus glutinosa* at Oss Mere; W6 *Salix* × *fragilis* at Marton Pool, Chirbury (Wigginton, 1979) and Morton Pool; and W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981). Finally, it is sometimes abundant on disturbed soils such as OV13 *Capsella bursa-pastoris* field margins at Upton Cressett; OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1981); OV24 *Urtica dioica* by the Severn in Shrewsbury; OV25 *Cirsium arvense* field margins at Kingshead; OV26 *Epilobium hirsutum* by Betton Pool (Wigginton, 1979), Longford and the Old River Bed; and OV30 *Bidens tripartita* by Marton Pool, Chirbury (Wigginton, 1979) and Newton Mere.



### *Onopordum acanthium* L.

#### Cotton Thistle

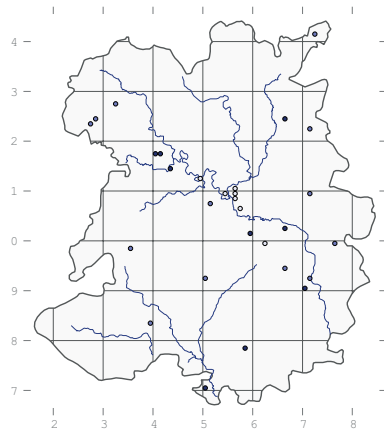
Neophyte. Scattered. Stable. Roadsides, arable fields.

First record: Williams, c. 1800, 'sides of roads about Norton near Atcham'.

A biennial grown in gardens and occasionally establishing in the wild in pasture, vegetable gardens, roadsides and arable fields. It persisted in its first known site for the best part of a century, being last recorded by W. Beacall in 1891.

One of its best known and most persistent sites is in and around the

grounds at Preston Montford Field Centre where it was first recorded by Sinker (1960, SJ4314) as 'two enormous plants in the vegetable garden there'. It is still present in pasture and in the centre grounds there. It is found typically in slightly overgrazed grassland or disturbed roadside verges where it can exploit regeneration niches with its biennial habit and copious seed production.



### *Silybum marianum* (L.)

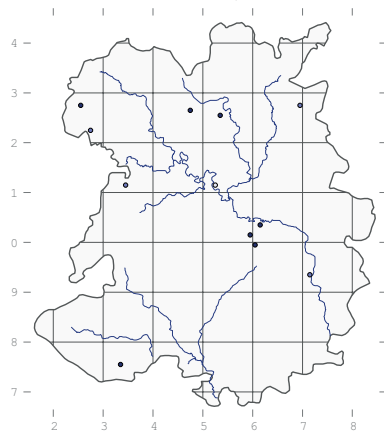
Gärt.

#### Milk Thistle

Archaeophyte. Scarce. Stable. Gardens, roadsides and churchyards.

First records (as *Carduus marianus*): Williams, c. 1800, 'on Ford Hill between Longnor and Preston' and 'in Sheinton Churchyard'.

Formerly grown as a medicinal herb and still quite common in gardens, but only rarely found in the wild. It can be persistent, as at Sheinton Church, where it still (2010) occurs in a corner where garden waste is dumped, and on the adjacent roadside. In Trefonen it came up near a bird table, presumably from seed (R.A. Dawes, 1996). At Upper Lye there were many plants in a paddock in 2006 (J. Clayfield).



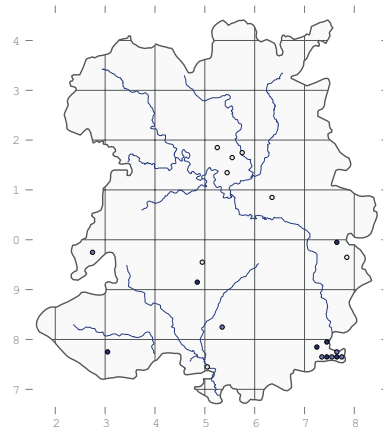
### *Serratula tinctoria* L.

#### Saw-wort

Native. Scarce. Decreasing. Axiophyte: woodland and grassland.

First records: Astley (E. Elsmere), Chesterton Roman Camp (G. Lloyd), Whitcliffe (H. Spare) and Wyre Forest (G. Jordan) (all in Leighton 1841).

In species-rich grassland and open woodland along rivers and rides. There are recent records of it in a field of MG5 *Festuca rubra* grassland at Ticklerton (SO488914, D.H. Wrench, 1994); on the edge of Hobarris Wood (SO3077, J. Clayfield, 2010); on a roadside at Sturt Common (SO724781, J. Bingham, 2004); in several places along the Dowles Brook in the Wyre Forest (J. & D. Bingham, 2004); and in Badger Dingle (SO769993, J. Handley, 2013).



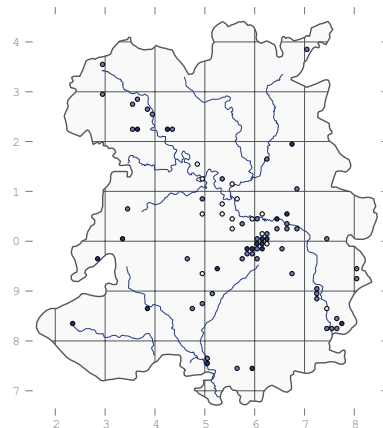
### *Centaurea scabiosa* L.

#### Greater Knapweed

Native. Local. Decreasing. Axiophyte: species-rich tall herb grassland.

First record: Williams, c. 1800, 'cornfields and borders and fields, common'.

In species-rich calcareous grassland, mainly CG2 *Avenula pubescens* in places like Ballstone Quarry and Windmill Hill; CG3 *Bromopsis erecta* in Lea Quarry; and MG1e *Centaurea nigra* on Windmill Hill. It is also sometimes found on railway lines, as at Baschurch (E.B. Benson, 1895 – B. Carleton, 1979).

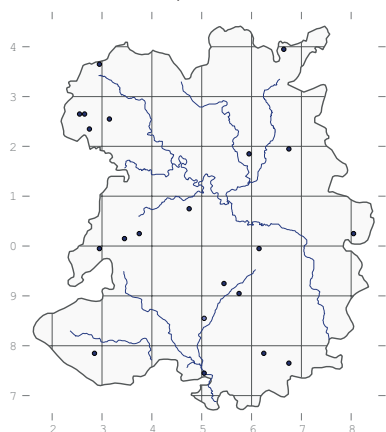


***Centaurea montana* L.****Perennial Cornflower**

Neophyte. Scattered. Casual. Gardens, churchyards, roadsides.

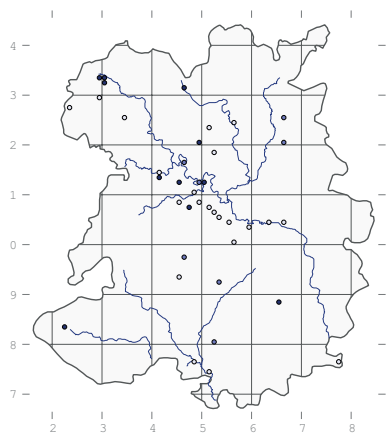
First record: M.B. Fuller, 1976, Diddlebury.

An occasional outcast from gardens, or recorded as established in churchyards. It is well established in a hedgebank at the lower end of Blakeway Hollow (SO613997, 2003) and in the graveyard of Trenant Chapel, Trefonen (SJ260269, R.A. Dawes, 1995).

***Centaurea cyanus* L.****Cornflower**

Archaeophyte. Scarce. Stable. Arable fields.

First record: J. Babington, c. 1803, 'in corn-fields [near Ludlow], common.'



A rare annual in arable fields, occasionally from long-buried seed, as it is no longer a seed contaminant, but increasing now as a component of wild flower seed mixes.

It has occurred regularly in a field at Pimhill Farm since 1993 (SJ492206, R.M. Stokes & J. Martin), whenever the field is used for growing cereals. It also occurred spontaneously in a field of silage at Wolverley (SJ4631, 1995).

More recently it has been recorded in three fields of spring barley at Tre-wern Farm (A.K. Thorne, 2006), at

Brynmaur Farm (N. Button, 2009), in a wheat field at Oak Farm, Shrewsbury (K.K. Bell, 2010) and in two fields of rape at Lower Faintree (2010). Three of these farms (Pimhill, Brynmaur and Oak) are in organic production. The only vegetation community recorded for it is OV10 *Senecio vulgaris* on a fairly light, sandy soil at Lower Faintree. It is also a popular ingredient in wild flower seed mixes, but it never persists for long as they are usually sown into permanent grassland.

***Centaurea solstitialis* L.****Yellow Star-thistle**

Recorded at Benthall (W.B. Allen, 1905), Buildwas (Allen, 1909), Acton Burnell (R.M. Serjeantson, 1916), and Broseley (G. Potts, 1929).

***Centaurea nigra* L.****Common Knapweed**

Native. Widespread. Stable. Grassland.

First record: Williams, 1799, 'var. fl. albo. On a ditch bank on the right hand side of the road between Uffington and Sundorn.'

Characteristic of unimproved and semi-improved meadows, often persisting in patches on roadside verges and along fences in more intensive agricultural land. It is ubiquitous in MG5 *Festuca rubra* and MG1 *Arrhenatherum elatius* throughout the county, and is also recorded in MG4 *Sanguisorba officinalis* at Lord's Meadows; MG6 *Cynosurus cristatus* in a few places; MG8 *Caltha palustris* at Morton Pool and Ruewood; and MG9 *Deschampsia cespitosa* at Cole Mere.

In calcareous grassland it is common in CG2 *Avenula pubescens* on Llynclys Hill, Wenlock Edge and elsewhere; CG3 *Bromopsis erecta* on Moelydd, Wenlock Edge and The Foxholes; and CG7 *Thymus polytrichus* in Farley and Lilleshall quarries. There are also records of it in M10 *Carex dioica* at Shirlett Gutter (Trueman, 1981); M13 *Palustriella commutata* at Trefonen Marshes; in all stands of M22 *Juncus subnodulosus* fen; M24 *Cirsium dissectum* at Black Coppice and Yell Meadow; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); and M27 *Filipendula ulmaria* at Cole Mere and Marl Allotment.

There is only one record of it in a swamp: S26 *Phragmites australis* fen in the ditch draining Cole Mere. Elsewhere, it is found in U1 *Rumex acetosella* on Ketley Pitmounds (Trueman, 1981); W8 *Fraxinus excelsior* at Blodwel Rock (Trueman, 1981) and Stevenshill; and W24 *Rubus*

*fruticosus* at Ironbridge (Trueman, 1981).



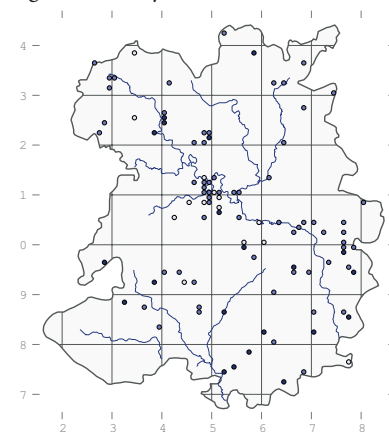
[*Cnicus benedictus* L., Blessed Thistle 'Wyke, near Tickwood. One plant only, height 3½ feet, unbranched. Also still at Callaughton' (G. Potts, 1924) (*Record of Bare Facts* 34, 1925). Best considered unconfirmed.]

***Cichorium intybus* L.****Chicory**

Neophyte. Scattered. Casual. Roadsides and waste ground.

First records: G. Jordan, 'Dowle, sparingly' and T. Bodenham 'fields at Welbatch' (both in Leighton 1841).

Once a seed contaminant in arable fields but more recently it has been restricted to roadsides, as at Hadnall, where it grew in MG1 *Arrhenatherum elatius* grassland. In the last few years it has started appearing in many places, where it has been sown in seed mixes in grassland on roadsides and in agricultural leys.

***Lapsana communis* L.****Nipplewort**

Native. Widespread. Stable. Hedges, arable fields, woodland.

First record: Williams, 1800. 'Hedges and gardens, common.'

A common widespread herb, typical of a wide range of habitats from



## Vascular plants

woodland to roadside verges. It is recorded in MG1 *Arrhenatherum elatius* on a roadside at Preston Montford (S. Geikie, 2008); OV10 *Senecio vulgaris* field margins at Eudon George; OV15 *Anagallis arvensis* at Filletts Farm; OV25 *Cirsium arvense* at Norton, Stockton (Trueman, 1981); and OV26 *Epilobium hirsutum* at Wollerton.

In woods it is found in W6 *Salix* × *fragilis* at Fenemere and Hencott Pool; W7 *Lysimachia nemorum* at Birchen Park and Fastings Coppice; W8 *Fraxinus excelsior* at Redhill Coppice (Trueman, 1981) and Brownheath Moss; and W24 *Rubus fruticosus* hedges at Chatwall, Lower Wallop, Nobold and throughout. Lowland: up to 481 m at Dolfaur (SO23218716, 2011).



*Centaurea nigra*



*Leontodon hispidus* (Dan Wrench)

### *Hypochaeris radicata* L.

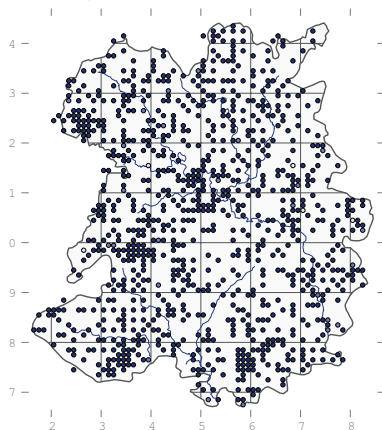
#### Cat's-ear

Native. Widespread. Stable. Grassland.

First record: Williams, 1800. 'Meadows and pastures. Common.'

Largely restricted to grasslands, including CG2 *Avenula pubescens* at Llanymynech Rocks; CG3 *Bromopsis erecta* in Lea Quarry; CG10 *Helianthemum nummularia* at Minton Batch (R. Tapper, 1983); MG1 *Arrhenatherum elatius* roadside verges at Preston Montford (S.T. Geikie, 2008); MG5 *Festuca rubra* and MG6 *Cynosurus cristatus* throughout the county; MG8 *Caltha palustris* at Melverley Farm, Morton Pool (D.H. Wrench, 1991) and Ruewood; OV23 *Dactylis glomerata* on road verges at Cosford (Trueman, 1981), Monkmoor, Shelton and elsewhere; U1 *Rumex acetosella* on Earl's Hill, Prees Heath and other sites; and U4 *Agrostis capillaris* at Cwm Collo.

In other habitats it has been recorded in OV10 *Senecio vulgaris* waste ground at Newport (Trueman, 1981); OV31 *Rorippa palustris* on the margin of Fenemere (M.J. Wigginton, 1979); W8 *Fraxinus excelsior* scrub at Albrighton; and W23 *Ulex europaeus* at Old Oswestry.



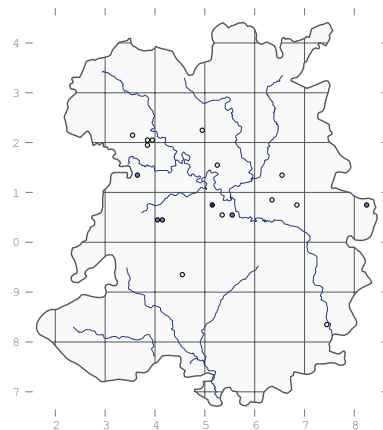
### *Hypochaeris glabra* L.

#### Smooth Cat's-ear

Native. Rare. Decreasing. Axiophyte: heathland & acid grassland.

First records: Williams, c. 1800, 'dry, banky pastures, not uncommon. About Eaton and Sundorne, Harmer Hill, Wrekin and Knockin Heath.'

The only recent record is from Boreton Bank (SJ516071, A.K. Thorne, 1990), where it occurred in the corner of a grazed field. It has been recorded in the past at Coundarbour (E.M. Rutter, 1956), Earl's Hill (Sinker, 1966), Loton Park (S. Stafford, 1976) and White Ladies Priory (B.R. Fowler, 1976).



[*Hypochaeris maculata* L., Spotted Cat's-ear

Listed by G.H. Griffiths (c. 1870) for the Church Stretton area.]

### *Scorzoneroide autumnalis* (L.) Moench

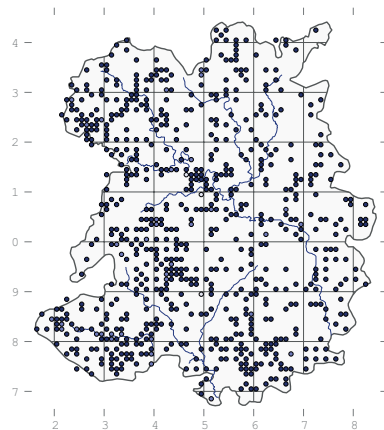
#### Autumnal Hawkbit

Native. Widespread. Stable. Grassland.

First record (as *Hedypnois autumnalis*): Williams, c. 1800, 'meadows and pastures, common.'

Typical of short grassland such as CG2 *Avenula pubescens* at Llanymynech Rocks (Trueman, 1981); H8 *Ulex gallii* at Prees Heath; MG5 *Festuca rubra* in many places; MG6 *Cynosurus cristatus* at Cramer Gutter and Ruewood; MG8 *Caltha palustris* at Crosemere, Morton Pool (D.H. Wrench, 1991) and Ruewood; M22 *Juncus subnodulosus* at Porty-y-waen (Trueman, 1981) and Sweeney Fen; M23 *Juncus effusus* at Gogbatch (C.M. Owen, 1983); OV23 *Dactylis glomerata* at Shelton; and U4 *Agrostis capillaris* on Brown Clee and Cwm Collo.

In other habitats it has been recorded in M35 *Montia fontana* at Carding Mill Valley and Wild Moor (both R. Tapper, 1983); OV31 *Rorippa palustris* at Fenemere (M.J. Wigginton, 1979); and W23 *Ulex europaeus* hedgebanks at Mellin-y-Grogue.



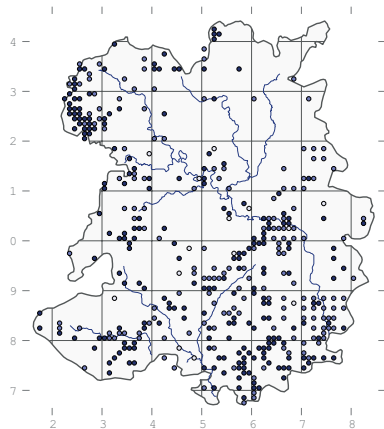


***Leontodon hispidus* L.****Rough Hawkbit**

Native. Local. Stable. Grassland and fens.

First record (as *Hedypnois hispida*): Williams, c. 1800, 'meads, common.'

On less fertile grasslands with some calcareous influence and in fens and flushes. There are records of it in CG2 *Avenula pubescens* on Wenlock Edge, Llynclys Hill and many other places; CG3 *Bromopsis erecta* in Ballstone and Lilleshall quarries; CG7 *Thymus polytrichus* in Nantmawr Quarry; MG1e *Centaurea nigra* on the verge of a track at Roman Bank; MG5 *Festuca rubra* in many places, including Llynclys Hill, Moelydd and Wenlock Edge; MG8 *Caltha palustris* at Morton Pool (D.H. Wrench, 1991); M10 *Carex dioica* at Shirlett Gutter (Trueman, 1980); and M22 *Juncus subnodulosus* fen-meadow at Porth-y-waen (Trueman, 1981).

***Leontodon* × *vegetus* Finch & P.D. Sell (*hispidus* × *saxatilis*)**

'Near Pant, GR 33/2.2. Calcareous grassland. Field record.' (P.M. Benoit, 1971; *Watsonia* 9, 1972, p. 156).

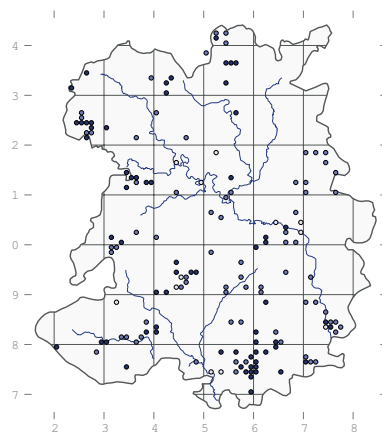
***Leontodon saxatilis* Lam.****Lesser Hawkbit**

Native. Local. Stable. Axiphyte: meadows, flushes and quarries.

First record (as *Thricia hirta*): Leighton, 1841, Bickley Coppice, near Montford Bridge.

In species-rich grassland such as CG2 *Avenula pubescens* at Dolgoch Quarry, Llanymynech Rocks, Llynclys Hill and Pant Roadside Verge (Trueman, 1981); CG7 *Thymus polytrichus* in Farley Quarry; MG5 *Festuca rubra* at Wagbeach and Treflach (both Trueman, 1981); MG6 *Cynosurus cristatus* at Cramer Gutter; MG8 *Caltha palustris* at Crose Mere; M13 *Palustriella commutata* on Caer

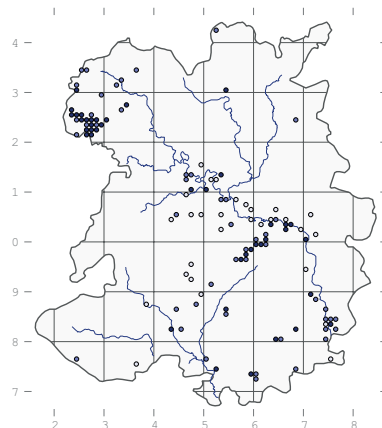
Caradoc (R. Meade, 2010); and U1 *Rumex acetosella* at Prees Heath.

***Picris hieracioides* L.****Hawkweed Oxtongue**

Native. Local. Decreasing. Roadsides, railway lines, riverbanks, quarries.

First record: Williams, c. 1800, 'ditch banks about Eaton Mascott.'

Typically in calcareous grassland in old limestone quarries, such as CG2 *Avenula pubescens* grassland in Ballstone Quarry; CG3 *Bromopsis erecta* at the Foxholes; and CG7 *Thymus polytrichus* in Nantmawr Quarry. It seems to be decreasing, except in its core areas on the limestone. Lowland: up to about 240 m at Lilleshall Quarry.

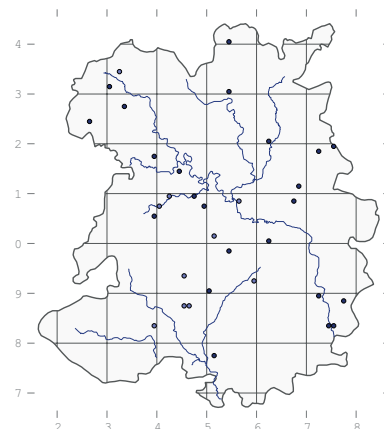
***Helminthotheca echioides* L. (Holub)****Bristly Oxtongue**

Archaeophyte. Scattered. Increasing. Roadsides, waste ground and gardens.

First record (as *Helminthia echioides*): H. Spare, 1841, Stanton Lacy.

In scattered locations along the A5 from Shrewsbury to Oswestry (B.J. Laney, 2008-9); on spoil heaps in quarries and derelict industrial sites and on railways such as the Severn Valley Railway at Highley; and on canal banks such as the Llangollen Canal at Hindford (E.D. Pugh, 1978). Bryan

Fowler once recorded it on shingle by the Rea Brook at Pontesbury (1980), but this is the only record of it in a semi-natural habitat.

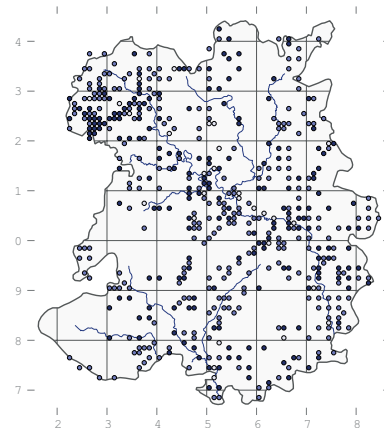
***Scorzonera hispanica* L.****Scorzonera**

Grown as a vegetable and persisting on old allotments in Madeley (SJ688041, G. Evans, 2004, BIRM).

***Tragopogon pratensis* L.****Goat's-beard**

Native. Widespread. Decreasing. Roadsides, waste ground and meadows.

First record: Williams, c. 1800, 'meadows, not uncommon.'



Formerly common in hay meadows but now rather rare in that habitat. It still occurs in MG5 *Festuca rubra* in several places, including Hilltop Meadow, Windmill Hill, Marked Ash and Derrington Meadow, but now it is more often seen on roadsides where it is typical of MG1 *Arrhenatherum elatius* grassland. As an annual to short-lived perennial, it prefers some disturbance, and it is often found along railway lines, canal towpaths and in old quarries. It appears to be less common than in Sinker's Flora and, when it does occur, it is often present in small quantities. Good places to see it include at Aston Locks, on the

## Vascular plants

Montgomery Canal, and Shelton Rough, where it has been known since Leighton's time. All plants are *T. pratensis* ssp. *minor* (Mill.) Wahlenb., although in 1890 W. Beacall recorded *T. pratensis* 'not minor' at Henley, which Hamilton (1909) accepted as a record of ssp. *pratensis*, although no specimen is known.

### *Tragopogon porrifolius* L. Salsify

Neophyte. Scattered. Casual. Waste ground.

First record: J.C. Melvill, 1924, 'on waste ground near the Rea Brook on the way to Pulley.'

Occasional on roadsides and waste ground. In 1961 N.M. Mackenzie and E.M. Rutter found it at Belmont House Shrewsbury; in 1993 A.P. Daly recorded it at The Quarry, Much Wenlock, and G.E. Castle found it on a roadside in Porth-y-waen; and in 2005 R.F. Shoubridge spotted a plant by the Ludlow bypass (SO526748, BIRM).

[*Sonchus palustris* L., Marsh Sow-thistle

Recorded by E. Lees in Leighton's Flora (1841), in a lane near Wellington. This was probably an error for the following, as Beckwith (1882) concluded.]

### *Sonchus arvensis* L. Perennial Sow-thistle

Native. Widespread. Stable. Roadsides, arable fields.

First record: Leighton, 1841, 'corn-fields, frequent.'

A formerly troublesome agricultural weed, now largely confined to field margins and roadsides. Also in fens, where it is sometimes described as a distinct subspecies, *uliginosus* (M. Bieb.) Nyman. The latter has been recorded several times in the county, most notably by W.E. Beckwith (1882) on the Weald Moors and at Cole Mere. W.H. Painter also recorded the var. *glabrescens* at Buildwas in 1907.

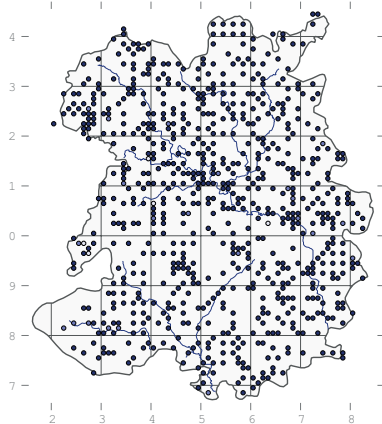
It is frequent on roadsides in MG1 *Arrhenatherum elatius* grassland and has been recorded in M22 *Juncus subnodulosus* fen at Crose Mere (Trueman, 1981); and OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979). It is easy to find on roadside verges around Shrewsbury, but one of the best places to see it in a variety of habitats is at Berrington Pool.

### *Sonchus oleraceus* L. Smooth Sow-thistle

Native. Widespread. Stable. Arable fields, disturbed ground, road verges.

First record: Williams, c. 1800, 'gardens, ditch banks and clover fields, common.'

On patches of bare ground in a variety of habitats, including CG2 *Avenula pubescens* grassland at Craig Sychtyn; MG1 *Arrhenatherum elatius* on a road verge at Preston Montford (S.T. Geikie, 2008); OV10 *Senecio vulgaris* on waste ground at Newport and Shifnal; OV23 *Dactylis glomerata* on a road verge at Shipley; OV25 *Cirsium arvense* in a field margin at Norton, Stockton; and S14 *Sparganium erectum* swamp on the margin of the Severn at Buildwas (the last five by Trueman, 1981). It is common up to about 300 m but absent from the summits of the higher hills.



### *Sonchus oleraceus* × *asper*

Just one record, from Kinnerley (R.A. Lewin, 1943).

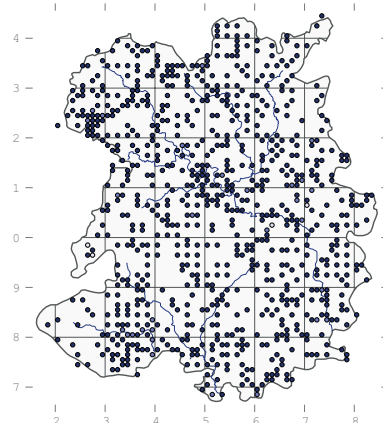
### *Sonchus asper* (L.) Hill Prickly Sow-thistle

Native. Widespread. Stable. Arable fields, quarries, disturbed ground, ponds and lake margins.

First record (as *S. oleraceus* var. *γ*): Williams, c. 1800, 'common.'

On bare ground in a variety of habitats, including CG3 *Bromopsis erecta* on rock outcrops in Ballstone Quarry and bare ground in Lea Quarry; OV10 *Senecio vulgaris* in fields at Eudon George, Lower Faintree and Welshampton (Trueman, 1981); OV13 *Capsella bursa-pastoris* on a road verge at Priorslee; OV18 *Polygonum aviculare* in an arable field at Edgmond; OV19 *Tripleurospermum inodorum* on a verge at Tong; OV23 *Dactylis glomerata* at Cosford and Uppington (the last six by Trueman, 1981); OV26 *Epilobium hirsutum* at Bomere Pool; OV30 *Bidens tripartita* by a pond at Black

Coppice; OV31 *Rorippa palustris* at Fenemere (M.J. Wigginton, 1979); and S14 *Sparganium erectum* in a pond at Brown Moss. On Abbot's Castle Hill (Trueman, 2005) and Attingham Park it is recorded in U1 *Rumex acetosella*; at Stevenshill it grows in W8 *Fraxinus excelsior* woodland along a forestry track; and at Old Oswestry it is found in W23 *Ulex europaeus* scrub. On the Stiperstones it grows on patches of bare ground at well over 435 m (SO3697, 2007).

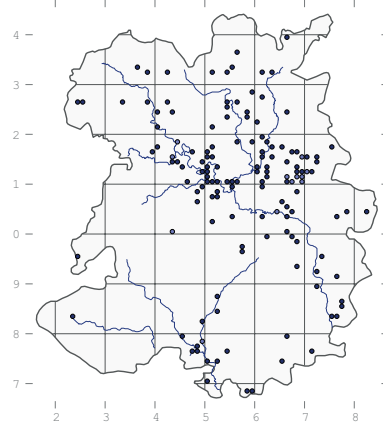


### *Lactuca serriola* L. Prickly Lettuce

Archaeophyte. Local. Increasing. Railways, road verges, waste ground, river banks and arable fields.

First record: G. Potts & W.B. Allen, 1904, 'near Buildwas Station.'

Becoming more widespread on road verges and bare ground, and sometimes in great abundance on field margins. In recent years it has started appearing in more natural habitats such as W8 *Fraxinus excelsior* woodland at Stevenshill. A good place to see it is around the old sugar beet factory at Allscott, where it was first recorded by E.M. Rutter in 1958.



***Lactuca sativa* L.****Garden Lettuce**

Listed by Lloyd & Rutter (1957) as 'an escape in a number of places, but hardly established.'

***Lactuca virosa* L.****Greater Lettuce**

Native. Rare. Increasing. Road verges.

On the side of the A5 at Upton Magna (SJ554118, B.J. Laney, 2009) and Preston, and subsequently on a roundabout at Whitchurch (R.J. Swindells, 2012). Old records by H. Spare at Stanton Lacy (in Leighton 1841) and A.W. Weyman at Ludlow Castle (Hamilton 1909) are considered to have been errors.

[*Cicerbita alpina* (L.) Wallr., Alpine Blue-sow-thistle

See *C. macrophylla*.]

***Cicerbita macrophylla* (Willd.) Wallr.****Common Blue-sow-thistle**

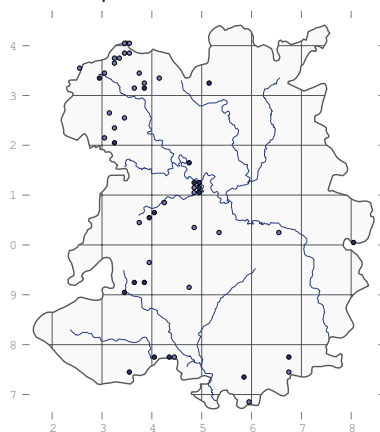
Neophyte. Scattered. Stable. Roadsides and waste ground.

First record (as *Lactuca macrophylla*): A. Wilkinson, 1922, 'near Shrewsbury'.

The first mention of this plant was in 1900, when Dr Calvert recorded a clump of *Lactuca alpina* near Kingsland Bridge in Shrewsbury. It was pronounced 'not quite typical' by the authorities at Kew a few years later, but it was not until 1922 that it was correctly identified by G.C. Druce from a specimen sent to the Botanical Exchange Club (BEC Rep. 1922, *Record of Bare Facts* 33, 1924). Melvill claimed at this time that it had also been growing in a field at Meole Brace for thirty years, which would make his observation by far the earliest record of it in the wild in Britain, but memories can be unreliable and it seems best to let Wilkinson's record stand. There was also a site at Wetmore near Onibury, where Mrs Luce had collected a specimen in 1915, but it was again misidentified as *L. alpina* (BEC Rep. 1915). Since then it has been recorded many times in the vicinity of Kingsland Bridge, and it was still present at the top of Becks Field in 2010. It is barely naturalised, growing on the edge of a path in MG1 *Arrhenatherum elatius* grassland on the edge of W8 *Fraxinus excelsior* woodland.

Elsewhere in the county it has been fairly persistent on roadsides in places

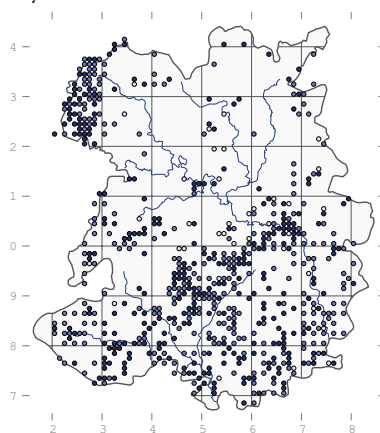
like Daywall from 1977 (A. Stratford) to 2010 (S. Swindells) and Neen Savage from 1977 (E. Heywood-Waddington) to 2010 (P.R. Green & A.C. Leslie). In 1989 J. Martin noticed 'more than a thousand' plants on a site in Coleham, but they were destroyed the following year. Another site for it was at St Martin's, where E.R. Lloyd found it in 1927 and it has since become fairly widespread in that part of the county. Now it has cropped up in numerous scattered locations, usually on roadsides but occasionally as a rampant garden weed (Craignant, M.E. Roberts, 1980), in churchyards (Benthall, I.S. Thompson, 1982), or on river banks (Rea Brook at Cleobury Mortimer, E. Heywood-Waddington, 1977; R. Teme at Tenbury, P.H. Waite, 1982).

***Mycelis muralis* (L.) Dumort.**  
**Wall Lettuce**

Native. Local. Stable. Woods and walls.

First record (as *Prenanthes muralis*): Williams, c. 1800, 'old walls and woods.'

On walls, rock outcrops and shady banks in calcareous woods and scrub. It is recorded only in W8 *Fraxinus excelsior* woods, as at Blodwel Rock (Trueman, 1981), Craig-Ilwyn and the Novers, and in W24 *Rubus fruticosus* scrub on walls and hedgebanks, as on a dry limestone wall at Stevenshill.

***Taraxacum officinale* Weber**  
**Dandelion**

Native. Widespread. Stable. Grassland, woodland, waste ground.

First record (as *Leontodon Taraxacum*): Williams, c. 1800, 'meadows and pastures, common.'

Widespread in disturbed habitats such as agricultural grasslands, road verges and gardens; less abundant in semi-natural grasslands, on rock exposures and in woodland. Recorded in CG2 *Avenula pubescens* grassland in Dolgoch Quarry and Jones's Rough; in CG3 *Bromopsis erecta* in Lea Quarry, Hilltop Meadow (D.H. Wrench, 1994) and Stretton Westwood (Wrench, 1995); and in CG7 *Thymus polytrichus* on cliffs at Presthope. In mesotrophic grasslands it is very frequent in MG1 *Arrhenatherum elatius* on road verges, river banks and meadows throughout; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG5 *Festuca rubra* throughout; in many stands of MG6 *Cynosurus cristatus* and MG7 *Lolium perenne*; MG8 *Caltha palustris* at Crose Mere, Melverley Farm, Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* in Easthope Wood; and in MG10 *Holcus lanatus* and MG13 *Alopecurus geniculatus* at Fenemere.

It is much less common in mires, being restricted mainly to the more base-rich communities such as M13 *Palustriella commutata* at Trefonen Marshes; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979), Morton Pool (Wrench, 1991) and Sweeny Fen; and M23 *J. effusus* at Ruewood (P. Welsh, 1981) and Sweat Mere. It also occurs in U1 *Rumex acetosella* on Abbot's Castle Hill, Haughmond Hill, Prees Heath and elsewhere.

Amongst the small number of open vegetation types sampled, it was found in OV13 *Capsella bursa-pastoris* headlands at Upton Cressett; OV15 *Anagallis arvensis* fields at Filletts Farm; OV20 *Sagina procumbens* ruins at Haughmond Abbey (Trueman, 1981); OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1982) and on ruins at Viroconium; OV23 *Dactylis glomerata* road verges at Cosford (Trueman, 1981), Monkmoor, Newport (Trueman, 1981) and Shelton; and OV31 *Rorippa palustris* lake margin at Fenemere (Wigginton, 1979).

Finally, in woods it is recorded as rare in W5 *Alnus glutinosa* at Morton Pool (Wrench, 1981); more abundant in W8 *Fraxinus excelsior* at



Blodwel Rock (Trueman, 1981), Craig Sychtyn, Llynclys Hill, Stokes's Barn, Wilderhope and Wynett Coppice; in a W21 *Crataegus monogyna* hedgebank at Uffington; and often in W24 *Rubus fruticosus* hedgebanks in places like Chatwall, Mellin-y-Grogue, Nobold and Day Houses. It is not restricted by altitude in the county, occurring on the summits of all the hills but mainly on disturbed ground, being largely absent from the heaths and moors.



The following microspecies have been recorded:

- *lacistophyllum* (Dahlst.) Raunk., Cole Mere (V. Gordon, 1954), Hillend (B.R. Fowler, 1977), Rakepark and Whitchurch (both T. Edmondson, 1984).
- *inopinatum* C. Haworth, SJ53 (T. Edmondson, 1993).
- *brachyglossum* (Dahlst.) Dahlst., Shrewsbury (Leighton, 1836, det. A.A. Dudman & A.J. Richards, CGE) and Prees Heath (SJ558365, Lockton, 2010, det. Richards, BIRM).
- *rubicundum* (Dahlst.) Dahlst., Llynclys Hill (SJ273235, Lockton, 1998, det. A.W. Reid & Richards, BIRM).
- *proximiforme* Soest, dry grassland on Haughmond Hill (SJ536138, T.C.G. Rich, 2012, det. Richards, NMW).
- *oxoniense* Dahlst., Wigmarsh (SJ381350, A.H.G. Alston, 1983, det. Richards, BM), Earl's Hill (Gordon, 1956 & Lockton, 1998, both det. Richards), SJ43 (Edmondson, 1989) and in dry limestone grassland on Llynclys Hill (SJ271239, Whild, 1998, det. Reid & Richards, BIRM).
- *fulviforme* Dahlst., Church Stretton (V. Gordon, 1971) and SO78 (E. Chicken, 1982).
- *degelii* G.E. Haglund, dry grassland on Haughmond Hill (SJ536138, Rich, 2012, det. Richards, NMW).
- *faeroense* (Dahlst.) Dahlst., Lord's Meadows (Fowler, 1979) and SJ43 (Edmondson, c. 1989).
- *naevosiforme* Dahlst., Bagley (SJ3927, Edmondson, 1980, det. Richards).
- *euryphyllum* (Dahlst.) M.P. Christ., on a mortared wall in a field at Puleston Hill (SJ740222, Fowler, 1978, det. Richards, OXF) and SJ43 (Edmondson, c. 1989).
- *cambricum* A. Richards, SJ43 (Edmondson, 1989).
- *bracteatum* Dahlst., SJ23 (Edmondson, 1989).
- *subbracteatum* A. Richards, SJ43 (Edmondson, 1989).
- *duplidentifrons* Dahlst., SJ32, SJ43 & SJ54 (Edmondson, 1989).
- *celticum* A. Richards, SJ32 (Edmondson, 1989).
- *hesperium* C. Haworth, SJ51 & SJ72 (Edmondson, 1993).
- *landmarkii* Dahlst., Draycott and Pitchford (both B.R. Fowler, 1979, det. Richards).
- *nordstedtii* Dahlst., Haughmond Park (C.C. Babington, 1833, CGE), West Felton (Babington, 1840, CGE), Lord's Meadows (Fowler, 1978, det. Richards, OXF), SO58 (E. Chicken, 1982) and Cole Mere (Edmondson, 1997).
- *procerisquameum* H. Øllg., Edgmond Marsh (Edmondson, 1980).
- *hamatum* Raunk., Colemere (Edmondson, 1980, det. Richards) and on the old runway at Prees Heath (SJ558365, Lockton, 2010, det. Richards, BIRM).
- *hamatulium* Hagend., Soest & Zevenb., Oswestry, SJ23, (Edmondson, 1980, det. Richards).
- *subhamatum* M.P. Christ., SJ53 (Edmondson, 1989, det. Richards).
- *hamiferum* Dahlst., Trefonen (Edmondson, 1980, det. Richards).
- *quadrans* H. Øllg., SJ34 (Edmondson, 1989).
- *pseudohamatum* Dahlst., Hen-plassey and Prees (Edmondson, 1980, det. Richards).
- *atactum* Sahlin & Soest, SJ62 (Edmondson, 1989).
- *hamatiforme* Dahlst., SJ22, SJ34, SJ53 (Edmondson, 1980+, det. Richards) and in MG5 *Festuca rubra* grassland in Ropewalk Meadow (SJ66460537, Lockton, 2012, det. Richards, BIRM).
- *kernianum* Soest, Hagend. & Zevenb., by the Borle Brook at New England (Lockton, 2010, det. Richards, BIRM).
- *lamprophyllum* M.P. Christ., Catteralslane, Lyneal, Prees, Prees Higher Heath and SJ32 (all Edmondson, 1980+, det. Richards).
- *pannucium* Dahlst., Bagley, Shawbury, Stoke-on-Tern and Whitchurch (all Edmondson, 1980, det. Richards).
- *subexpallidum* Dahlst., SJ32, SJ42, SJ43 and SJ63 (all Edmondson, 1980).
- *undulatum* Lindb.f. & Markl., SJ32 (Edmondson, 1989) and in secondary woodland on Llynclys Hill (Lockton, 1998, det. A.W. Reid & Richards, BIRM).
- *alatum* Lindb.f., SJ23, SJ32, SJ42 & SJ53 (all Edmondson, 1989, det. Richards).
- *horridifrons* Rail., Bletchley and Harmer Hill (Edmondson, 1980).
- *insigne* Ekman ex M.P. Christ. & Wiinst., SO58 (Chicken, 1982) and Attingham Park (SJ550107, Lockton, 2005, det. Richards, BIRM).
- *lepidum* M.P. Christ., SJ43, SJ53 & SJ54 (all Edmondson, c.1989).
- *expallidiforme* Dahlst., Whitchurch (Edmondson, 1980).
- *subcyanolepis* M.P. Christ., in a field near Chipnall (SJ718313, B.R. Fowler, det. Richards, 1979).
- *pallidipes* Markl., on grass by Shrewsbury prison (SJ495129, Rich, 2012, conf. Richards, NMW).
- *croceiflorum* Dahlst., Ash Magna, Ellesmere, Hungryhatton and Lyneal (all Edmondson, 1980) and by Shrewsbury prison (SJ495129, Rich, 2012, det. Richards, NMW).
- *lacerifolium* Hagl., SJ62 (Edmondson, 1993).
- *porrigens* Markl. ex Puol., SJ42 and SJ52 (both Edmondson, 1980).
- *undulatiflorum* M.P. Christ., Catteralslane (Edmondson, 1980) and 'on grass by Shrewsbury prison' (SJ495129, Rich, 2012, conf. Richards, NMW).
- *ancistrolobum* Dahlst., Chetwynd (Edmondson, 1980), Faintree (SO661893, 2011), and on a wall by

the Severn in Shrewsbury (SJ497129, 2012) (both Rich, det. Richards, NMW).

- *sellandii* Dahlst., Ellesmere, Prees, SJ32 (all Edmondson, 1980+).
- *altissimum* Lindb.f., SJ71 (Chicken, 1982).
- *aequilobum* Dahlst., Beckbury (SJ7601, Lockton, 2010, det. Richards, BIRM).
- *latissimum* Palmgr., Lyneal (Edmondson, 1980, det. Richards).
- *latens* H. Øllg., SJ72 (Edmondson, 1989).
- *exsertum* Hagend., Soest & Zevenb., SJ53 (Chicken, 1982).
- *leptodon* Markl., near the Canal pub. Shrewsbury (SJ496132, Rich, 2012, det. Richards, NMW).
- *pannulatum* Dahlst., Oswestry and SJ71 (both Edmondson, 1980+, det. Richards).
- *lingulatum* Markl., Edgmond, Ellesmere and Ollerton (all Edmondson, 1980), and on a limestone cliff at Presthope (SO573968, 2005, det. Richards, BIRM).
- *rhamphodes* Dahlst., Cockshutt, Lyneal, Whitchurch and SJ32 (all Edmondson, 1980+).
- *vastisectum* Markl. ex Poul., SJ43 (Edmondson, 1989).
- *cordatum* Palmgr., railway ballast near Woore (SJ735408, Fowler, 1979, det. Richards, E) and SJ32 (Edmondson, 1989).
- *ekmanii* Dahlst., Catteralslane, Lyneal and Trefarclawydd (all Edmondson, 1980+, det. Richards).
- *ochrochlorum* G.E. Haglund ex Rail., on grass by Shrewsbury prison (SJ495129, Rich, 2012, det. Richards, NMW).
- *aurosulum* Lindb.f., Chetwynd (Edmondson, 1980).
- *sinuatum* Dahlst., SJ72 (Edmondson, 1989).
- *dahlstedtii* H. Lindb., roadside layby near Woore (SJ742424, Edmondson, 1979), SJ53 (Chicken, 1982) and SJ43 (Edmondson, 1989).
- *huelphersianum* Dahlst., SJ32 (Edmondson, 1989).
- *anceps* H. Øllg., SJ54 & SJ72 (Edmondson, 1989).
- *fasciatum* Dahlst., Edgmond Marsh (Edmondson, 1980).

- *acutifidum* M.P. Christ., SJ34 (Edmondson, 1989).

- *melanthoides* Dahlst., SJ42 (Edmondson, 1989).

### *Crepis paludosa* (L.) Moench Marsh Hawk's-beard

Native. Local. Decreasing. Axiophyte: wet woodland and marshy grassland.

First record: Williams, c. 1800, 'in the boggy part of the copse at the top of the hill opposite Mr Kynaston's house at Hardwicke.'

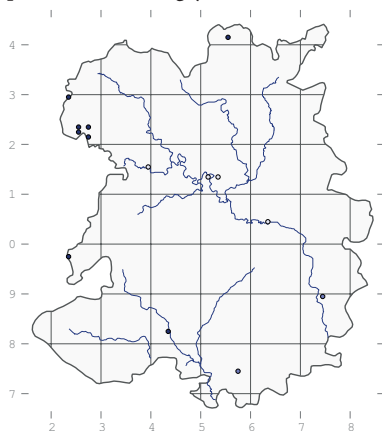
In fens, marshy grassland and wet woodland along rivers and streams, but absent from the meres and mosses. At Trefonen Marshes it grows in M10 *Carex dioica* (Trueman, 1981) and at Sweeny Fen it occurs in M22 *Juncus subnodulosus* fen-meadow. It has disappeared from the eastern half of the county over the last century or so and it is becoming rarer in several of its sites, including on the Stiperstones. There are recent records of it at Crofts Mill Pasture (J.A. Thompson, 1998), Llawnt Quarry (G.M. Stone, 1996), Mill Wood (Thompson, 2004), a fen at Nant Farm (A.P. Dawes, 1995), Nanteris Wood (R. Mileto, 2000) and Sodylt Wood.

### *Crepis biennis* L. Rough Hawk's-beard

Native. Scarce. Stable. Roadsides and woodland tracks.

First record: Miss Lloyd, 1864, Shrawardine (Hamilton 1909).

A native species in the south-east of England but just a casual in Shropshire, usually found on roadsides and not persisting for long. There are recent records for Llanyblodwel ('at least 300 plants on both sides of the road,' SJ251231, Perring, 1997), the Discovery Centre at Craven Arms (J. Clayfield, 2007), and a forestry plantation at Craig-y-rhiw.



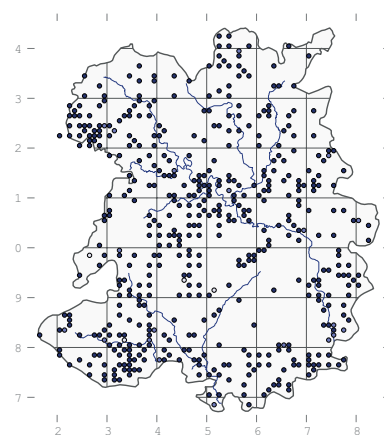
### *Crepis capillaris* (L.) Wallr.

#### Smooth Hawk's-beard

Native. Widespread. Stable. Grassland and disturbed ground.

First record (as *C. tectorum*): Williams, c. 1800, 'meadows, clover fields, ditch banks and walls, common.'

In a variety of habitats, often on bare ground or disturbed soils. Recorded in CG3 *Bromopsis erecta* in Lea Quarry, the Foxholes and Hilltop Meadow; MG5 *Festuca rubra* at the Foxholes; in OV10 *Senecio vulgaris* waste ground at Newport; and in OV23 *Dactylis glomerata* in Dorrington Sand Quarry and in Newport (the latter three by Trueman, 1981). The var. *glandulosa* was recorded at Shelderton by Perring in 1975.



*Gnapthium uliginosum*



*Inula hookeri*

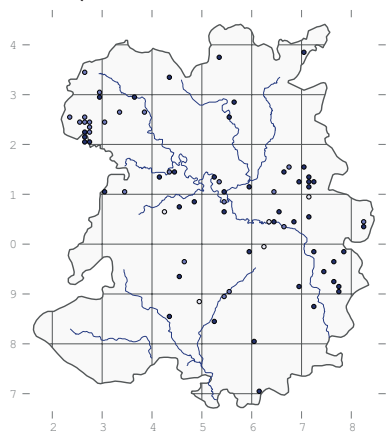
## *Crepis vesicaria* L.

### Beaked Hawk's-beard

Neophyte. Scattered. Increasing.  
Roadsides and grasslands.

First record: J.W. Carr, 1895, Much Wenlock (NOT).

A common weed of roadsides and railway lines in the south-east of Britain, becoming sparse north and west of Shropshire. It is quite widespread in this county, more so in the east. Sometimes it grows in species-rich meadows, and it was spectacularly abundant in a newly-created hay meadow at Venus Pool in 2006. At Stretton Westwood it grew in ancient CG3 *Bromopsis erecta* in 1995 (D.H. Wrench), but that site was incorporated into a quarry. Good places to see it are on roadsides and waste ground in the north of Telford, around Granville Country Park and The Humbers.



## *Crepis setosa* Haller f.

### Bristly Hawk's-beard

Just one record: Beckwith, 1885, 'several plants in a clover field at Donnington near Wroxeter.' This is typical for it, as a casual in newly sown leys, not persisting.

## *Pilosella officinarum*

F.Schultz & Schultz-Bip.

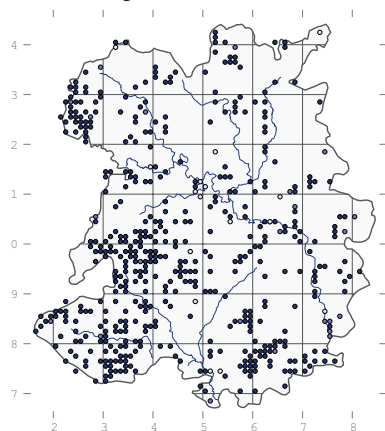
### Mouse-ear-hawkweed

Native. Local. Stable. Grassland.

First record (as *Hieracium pilosella*): Williams, c. 1800, 'dry ditch banks and pastures, common.'

A stoloniferous perennial herb of short grassland and bare rock, on a variety of substrates from acid to calcareous, sandy to solid rock, and very drought tolerant. It is most common in the hills, where it is ubiquitous in U1 *Rumex acetosella* grassland on hills such as the Long Mynd, Earl's Hill and Titterstone Clee and CG2 *Avenula pubescens* on limestone hills such as

Wenlock Edge, Moelydd and Llynclys Hill. It has also been recorded in CG3 *Bromopsis erecta* in Lilleshall Quarry, on Moelydd, at Stokes's Barn (Trueman, 1981), the Foxholes and Stretton Westwood (D.H. Wrench, 1995); CG7 *Thymus polytrichus* at Lilleshall Quarry, Moelydd, Nantmawr Quarry and Presthope; CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981); H8 *Calluna vulgaris* at Prees Heath; MG5 *Festuca rubra* in many places, including Benthall Hall (Trueman, 1981), Hayton's Bent (Wrench, 1995) and Moelydd; OV10 *Senecio vulgaris* waste ground at Newport (Trueman, 1981); OV37 *Festuca ovina* spoil heaps at Snailbeach (Trueman, 1981); U4 *Agrostis capillaris* at Brown Clee, Cwm Collo and Westcott Hill; U5 *Nardus stricta* at Squilver, and W24 *Rubus fruticosus* scrub at High Rock (the last three by Trueman, 1981). A good place to see it is in Pattens Rock Quarry on Benthall Edge.



## *Pilosella caespitosa*

(Dumort.) Sell & C. West

### Yellow Fox-and-cubs

In 1908 J.C. Melvill collected a plant from a wall near Shrewsbury (conf. P.D. Sell & C. West, YRK; see BEC Rep. 1908 p. 384). This was probably at Meole Brace, where it would have been introduced.

## *Pilosella aurantiaca* (L.) F.

Schultz & Schultz-Bip.

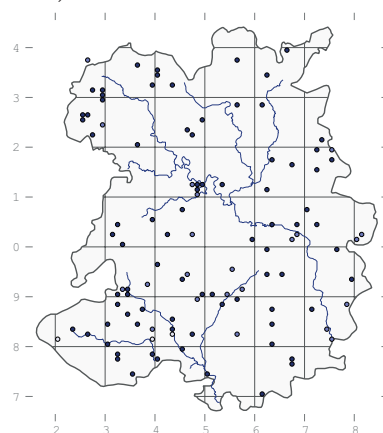
### Fox-and-cubs

Neophyte. Scattered. Increasing.  
Roadsides and churchyards.

First record: W. Phillips, 1891, Whettleton Lane.

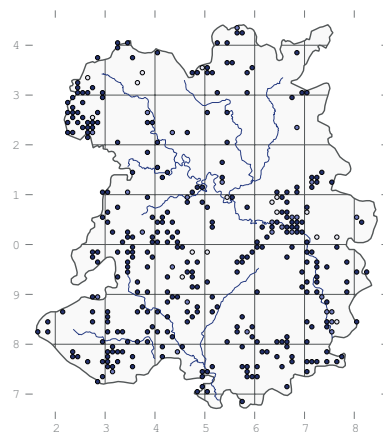
Churchyards and roadsides not far from gardens; occasionally naturalised on railways and in grassland. A good place to see it is at Old Oswestry, where it is well established in grassland and has been recorded since 1977

(E.M. Hignett). At Worthen it grows in grassland in the churchyard and on the walls around, which is not unusual. There are no recent records for it on railways, but it used to grow at Oswestry Railway Station (Hignett, 1978 – Perring, 1988) and by the Severn Valley Railway at Severn Lodge (W.A. Thompson, 1979). All plants are probably ssp. *carpathicola* (Naeg. & Peter) Sojak, which was first noted by Lady J. Legge's boy scouts at Patshull Hall in 1916 (*Record of Bare Facts* 33, 1924).



## *Hieracium* L. agg.

### Hawkweed



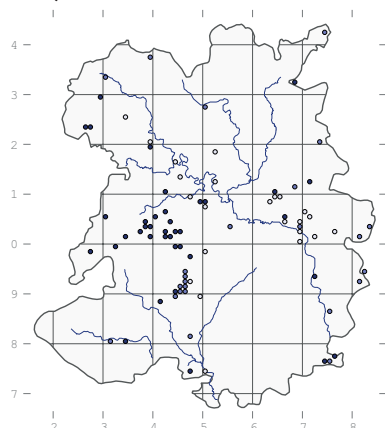
The hawkweed genus is an aggregate of mostly apomictic microspecies which form populations of identical clones, many of which have been named, but the taxonomy is difficult and constantly changing. Sell (2006) argues that it is more useful to recognise the microspecies for their distinct ecology, but it has to be admitted that most of them seem to grow in rather similar habitats – typically on dry soil in humid situations such as wooded roadside banks, rock exposures, quarries and waste ground. They are intolerant of grazing, mowing, competition and dense shade, and are consequently quite uncommon. In many ways it is more useful to consider the group as one species, and many botanists simply record *Hieracium* sp.



In the accounts here all recent records are supported by voucher specimens and have been named by D.J. McCosh or P.D. Sell.

The following microspecies have been recorded:

- *vagum* Jord., Glabrous-headed Hawkweed. First record: Leighton (det. P.D. Sell), 1835, Bickley Coppice (SHY). Widespread in north Shropshire, recorded recently along a track onto Whixall Moss; on a dry hedgebank opposite the Hollow, Upton Magna; in secondary woodland at Nesscliffe Training Camp (A.K. Thorne, 2005); along a track on Llyncllys Hill (J. Pedlow, 2006); in Blodwel and Blackbridge quarries (both Thorne, 2006); and at Pant-glas (D.P. Earl, 2006).
- *salticola* (Sudre) Sell & C. West, Bluish-leaved Hawkweed. First record: Ley (det. McCosh), 1909, Marshbrook (BM). The only recent record is from a spoil heap at Snailbeach (A.K. Thorne, 2007) but it was recorded quite widely in the eastern parts of the county by B.R. Fowler (det. C.E.A. Andrews) in the 1970s in places such as old railway embankments near Bearstone and Cosford, a sandy roadside bank at Ludstone and in woodland on Abbot's Castle Hill.
- *sabaudum* L., Autumn Hawkweed. First record: Leighton (det. Sell & C. West), 1832, Shrewsbury (CGE). Widespread in the south of the county, typically on roadside banks in the foothills. It has been found recently at Granville Country Park, on a roadside bank at Nesscliffe, in Vane Coppice (all A.K. Thorne, 2000-2002), in Skeys Wood (B. Westwood, 2002) and – forma *bladonii* (Pugsley) P.D. Sell – by a track near the Dowles Brook in the Wyre Forest (Thorne, det. McCosh).



- *umbellatum* L., Umbellate Hawkweed. First record: Williams,

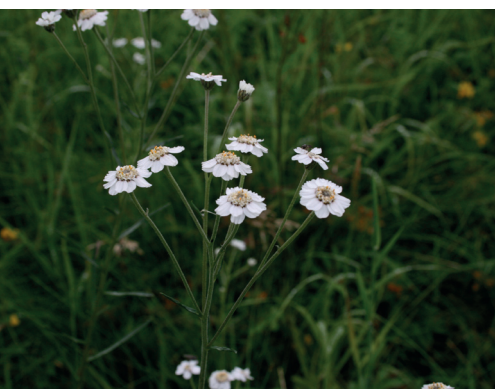
c. 1798, 'at the east corner of Bomere Wood.' Widespread. Sometimes treated as a section because it is one of the few fertile diploids and it exhibits greater variability. The earliest confirmed record of *H. umbellatum* s.s. is from Howle Green (A.H.G. Alston, 1886, det. P.D. Sell & C. West, CGE). There are recent records for Bridgnorth Cemetery, Coton Hill railway sidings (R.M. Stokes, 1994) and Lydebrook Dingle. The ssp. *bichlorophyllum* (Druce & Zahn) P.D. Sell & C. West was recorded by Perring at Salisbury Hill in 1988.

- *eboracense* Pugsley, Northern Hawkweed. First record: Ley (det. McCosh), 1904, Roman Bank, BM. The only recent site for it is at Llanymynech Rocks, where it grows on the quarry floor (A.K. Thorne, 2001 & 2006). Ley also recorded it at Diddlebury and Buildwas in 1909 (both det. Sell, CGE).
- *lasiophyllum* Koch, Stiff-haired Hawkweed. First record: J. Fraser (det. Painter), 1888, Earl's Hill (HLU, LIVU, SHY). On rock ledges and scree on Earl's Hill and in Carding Mill Valley, where it was first recorded by Ley in 1909 and more recently by A.K. Thorne in 2000. Here it is restricted to inaccessible ledges near the Burway.
- *triviale* Norrlin, Grey-headed Hawkweed. One record: W.B. Allen (det. McCosh), 1884, Bridgnorth (BM).
- *vulgatum* Fr., Common Hawkweed. First record: W.H. Painter (conf. A. Ley), 1908, Cox Wood. Frequent in the Oswestry district and around Ironbridge, with one outlying record for Horderley (A. Ley, 1909, det. Sell & C. West, CGE). There are recent records for grassland at Old Oswestry and Bryn Celyn, walls at Nantmawr, riverside rocks at Lanywood (A.K. Thorne, 2005), and quarries at Llyncllys Hill and at Llanymynech Rocks (Thorne, 2006). Painter's plant at Cox Wood was forma *subravusculum* (W.R. Linton) P.D. Sell and Ley's plant from Horderley was forma *sejunctum* (W.R. Linton) P.D. Sell.
- *diaphanum* Fr., Dark-leaved Hawkweed. First record: Painter (det. Sell) 1904, Benthall Edge (SHY). In CG2 *Avenula pubescens* grassland at Dolgoch Quarry and Jones's Rough and in dry secondary woodland at Muxton Marsh. It has also been recorded on a rock ledge at Earl's Hill (A.K. Thorne, 2002). It is considered to be an introduced species of waste ground (Sell & Murrell, 2006). Earlier records for Shropshire include Marshbrook (Ley, 1909), The Wrekin (Melvill, 1923), Whitehaven Quarry (C.E.A. Andrews, 1954) and Church Pulverbatch (Trueman, 1984).
- *anglorum* (Ley) Pugsley, Anglian Hawkweed. First record: W.H. Painter (det. McCosh), 1904, Benthall Edge (CGE). There are recent records of it along a track at Lloyds Coppice (A.K. Thorne, 2005) and in Llyncllys Quarry (Thorne, 2006), where it was first recorded by C.E.A. Andrews in 1954 (BIRM). It has also been collected at Marshbrook (A. Ley, 1909, CGE). E.M. Rutter's record for Dolgoch Quarry in 1955 (see Sinker, 1985) has not been confirmed.
- *diaphanoides* Lindeb., Diaphanous Hawkweed. Collected in Pattens Rock Quarry on Benthall Edge by A.K. Thorne in 2001, where it was previously recorded by Painter (det. Ley), in 1904.
- *acuminatum* Jord., Tall Hawkweed. First record: Leighton (det. Sell), 1835, Oxon Hall (SHY). This taxon has been split in the new classification, so it is much less common than described by Sinker (1985). Many of the plants previously assigned to this taxon are now *H. argillaceum*. It grows on limestone spoil at Nantmawr Quarry and natural limestone scree at Jones's Rough. It has also been found on scree at Earl's Hill (A.K. Thorne, 2002).
- *consociatum* Jord. ex Boreau, Sociable Hawkweed. Just one record: Lockton & Whild (det. McCosh), 2003, on walls in Clun (BIRM).
- *argillaceum* Jord., Southern Hawkweed. First record: Whild & Lockton (det. McCosh), 2003, Gravels (BIRM). On walls in a disused railway cutting at Benthall Edge (A.K. Thorne 2003), at the Station Inn, Horsehay (Halliday, 2006) and in quarries on Llyncllys Hill, Cynnyon and Pant (all Thorne, 2006).
- *nemophilum* Jord. ex Boreau, Grassland Hawkweed. Sell & Murrell (2006) consider this to be a native species of calcareous grassland in the west of England. There is only one record for Shropshire, from a rocky outcrop that is out of the reach

## Vascular plants

of sheep grazing on the Long Mynd near Plowden (SO390875) by A.K. Thorne in 2005.

- *sylvularum* Jord. ex Boreau, Ample-toothed Hawkweed. One record (as *H. subcrassum*): A. Ley and S.H. Bickham (det. Sell), 1909, 'roadside bank at Whittingslow near Marshbrook.'
- *cinderella* (Ley) Ley, Long-bracted Hawkweed. First record: W.H.Painter (det. Sell), 1896, Bishops Castle (SHY). Largely restricted to the marches and south Wales, it is fairly common in the Shropshire hills. Good sites for it include Pattens Rock Quarry at Benthall Edge (A.K. Thorne, 2001) where it was first recorded by Hamilton in 1910, and along the roadside at Harton Hollow, where it was first recorded by H.M. Davidson in 1990 (det. J. Bevan). Sinker (1985) had very few records of it, but it is now known to be quite widespread in the county.
- *sublepidoides* (Zahn) Druce, Grey-bracted Hawkweed. First record: E.M. Rutter (det. Sell & C. West), 1954, wall of Shrewsbury Cemetery (CGE). Recorded by M.B. Fuller along a forestry track at Childshill Coppice and on roadside banks at Stoke St Milborough and Burnt House (all 1986, det. W.A. Thompson). There



*Achillea ptarmica*



*Senecio squalidus*

are also tentative records for Harton Hollow and the Wyre Forest, which need confirmation.

- *exotericum* Jordan ex Boreau, Jordan's Hawkweed. First record: Lockton & Whild (det. D.J. McCosh), 1999, Coed-detton (BIRM). There are only two confirmed records so far: on a roadside verge at Coed-detton and in Pattens Rock Quarry on Benthall Edge (A.K. Thorne, 2001).

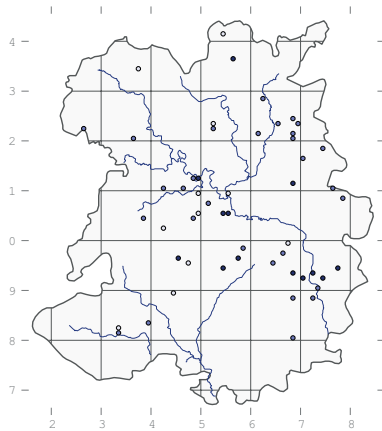
### *Filago vulgaris* Lam.

#### Common Cudweed

Native. Local. Decreasing. Axiophyte: grassland, quarries, waste ground.

First record (as *Gnaphalium germanicum*): Williams, c. 1800, 'sandy and gravelly pastures and ditch banks, common.'

On bare ground and dry grassland, historically in lowland stands of U1 *Rumex acetosella* grassland but these are now becoming uncommon. There are recent records of it on spoil heaps at Ketley (R.M. Stokes, 2004), a field edge at Cound Stank which was sown with seed from Loton Park, Hilton Sand Pit and Morville Quarry (both N. Button, 2006), Cound Quarry (A.K. Thorne, 2006), Stanmore (J. Clayfield, 2007), a building site at the Gay Meadow (D.H. Wrench, 2007), Worsley (D. Briggs, 2007), Lilleshall Quarry and Bridgnorth Cemetery.



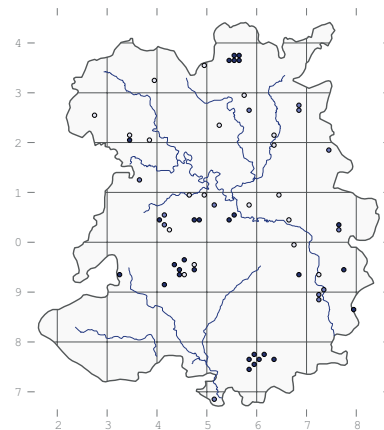
### *Filago minima* (Smith) Pers.

#### Small Cudweed

Native. Widespread. Stable. Axiophyte: grassland and quarries.

First record (as *Gnaphalium minimum*): Williams, c. 1800, 'sandy pastures and ditch-banks, common.'

Restricted to U1 *Rumex acetosella* grassland in places like Earl's Hill, Prees Heath and Titterstone Clee (A.K. Thorne, 1999). It occurs as high as about 475 m on Titterstone Clee (SO594776, 1996).



### *Antennaria dioica* (L.) Gärtn.

#### Mountain Everlasting

Native. Rare. Last recorded in 1945. Grassland and heath.

First record (as *Gnaphalium dioicum*): J. Evans, 1805, 'on the road from Trebrodind to Clun.'

The only known site in v.c. 40 was at Jacob's Ladder on Llynclys Hill, where it was discovered by E.R. Lloyd in 1926, but it was last seen by E.M. Rutter in 1961. It also occurs on Llanymynech Hill, but on the Montgomeryshire side.

### *Anaphalis margaritacea* (L.) Benth.

#### Pearly Everlasting

Neophyte. Scattered.

A garden escape, recorded in the Wyre Forest by T. Butt in 1828; on pit-mounds at Ketley by T. DuGard in about 1840; at Wistanstow Church by P.J. Whittle in 1986; and in Earnwood Copse in the Wyre Forest by J. Bingham in 1990.

### *Gnaphalium sylvaticum* L.

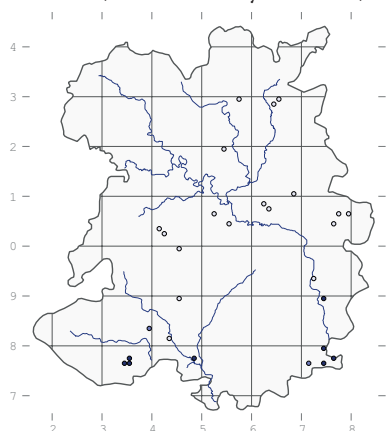
#### Heath Cudweed

Native. Scarce. Stable. Axiophyte: heaths and woodland rides.

First record: Withering (as *G. rectum*), 1787, 'sandy heath a mile from Shifnal on the road to Wolverhampton.'

Now a rare annual of forestry rides, usually in W10 *Quercus robur* woods but in open conditions in seasonally damp hollows. J. Bingham recorded its associates at Withybed Wood in 1986, which shows that it was in OV28 *Agrostis stolonifera* community. Other places where it has been recorded recently include a forestry ride at Dudmaston (J. Clayfield, 2010), Hopton Titterhill (Clayfield, 2006), Longdon Orchard (Bingham, 2010), Postenplain (Bingham, 1998) and Wimperhill Wood (R.M. Stokes, 1995).

It has declined dramatically in the Wyre Forest in recent years, from 100 or so plants in the early 1990s to just a few individuals in 2010 (Bingham). Lowland: up to 365 m at Hopton Titterhill (SO356770, Clayfield, 2006).



***Gnaphalium uliginosum* L.**  
**Marsh Cudweed**

Native. Widespread. Stable. Ponds, lake margins, muddy grassland, arable fields.

First record: Williams, c. 1800, 'sandy margins of pools where the water has lain in the winter, and in damp shady borders in gardens and shrubberies, common.'

In damp places in a variety of habitats, including CG10 *Helianthemum nummularia* in Minton Batch (R. Tapper, 1983); MG6 *Cynosurus cristatus* at Cramer Gutter; M23 *Juncus effusus* on Haughmond Hill; OV10 *Senecio vulgaris* community in arable fields at Lower Faintree and Welshampton (Trueman, 1981); OV15 *Anagallis arvensis* in fields on Filletts Farm; OV30 *Bidens tripartita* on pond margins at Brown Moss; and OV31 *Rorippa palustris* on the edges of ponds and lakes at Brown Moss, Fenemere (M.J. Wigginton, 1979) and Venus Pool. It is not limited by altitude, growing around pools on the summit of Brown Cle at 507 m (SO59668667, 2001).

***Gnaphalium luteoalbum* L.**  
**Jersey Cudweed**

Just one record, at Tasley (W.P. Brookes, <1895, SHY).

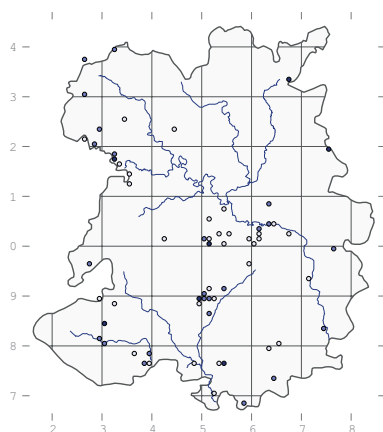
***Inula helenium* L.**  
**Elecampane**

Archaeophyte. Scattered. Decreasing. Roadsides, river banks, gardens and churchyards.

First record: R. Gough, 1789, 'in the wood near Bishops Castle.'

Well established at a few sites, such as Marrington Dingle (A.R. Horwood,

1901 – E.M. Rutter, 1960), a field by Eaton-under-Heywood church (G.R. Jebb, 1892 – J.A. Thompson, 1998), Llwyntidmon (J.F.M. Dovaston, 1841 – E.D. Pugh, 1984) but generally only present as a garden outcast and not persisting. There are recent records of it on waste ground at Newport (T. MacLean, 1993), Bitterley (E.V.J. Cohn, 1996), Acton, Market Drayton (both M.S. Duffell, 2008) and along a lane at Hendre.



***Inula hookeri* C.B. Clarke**  
**Hooker's Fleabane**

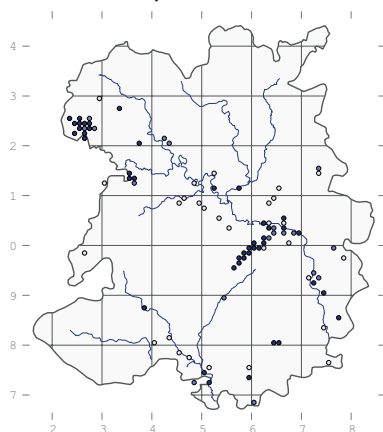
Neophyte. Rare.

Well established at Mousecroft Lane Gravel Pit (SJ745108, K.K. Bell, 2008, conf. E.J. Clement, BIRM).

***Inula conyzae* (Griess.) Meikle**  
**Ploughman's-spikenard**

Native. Local. Decreasing. Axiophyte: meadows, quarries and road verges.

First record: L. Brown, 1727, 'in the road between Onibury and Ludlow.'



Typical of bare patches in grazed calcareous grassland and old limestone quarries, recorded in CG2 *Avenula pubescens* grassland in Pattens Rock Quarry (Trueman, 1981) and Blackbridge Quarry; CG3 *Bromopsis erecta* in Ballstone Quarry and Lea Quarry; and CG7 *Thymus polytrichus* in Farley Quarry. In the past it was

often recorded on roadsides and in 2009 B.J. Laney found it in several places along the verges of the A5, but many of the current sites are old quarries. Good places to look for it include Windmill Hill and Moelydd.

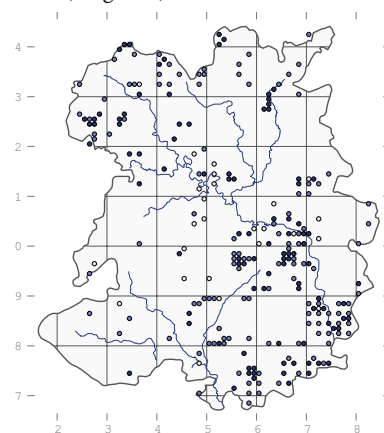
***Pulicaria dysenterica* (L.) Bernh.**

**Common Fleabane**

Native. Local. Stable. Damp grassland, canal banks, woodland margins.

First record (as *Inula dysenterica*): Williams, c. 1800, 'wet lanes, meadows and sides of pools, common.'

A perennial of damp hollows in grassland, woodland edges and road verges. Recorded on an MG1 *Arrhenatherum elatius* verge at Lanegreen; in MG10 *Holcus lanatus* in a meadow at Brown's Corner (Trueman, 1981); M22 *Juncus subnodulosus* at Sweeny Fen (A. Hillman, 1992); M27 *Filipendula ulmaria* on a road verge at Lower Netchwood (Trueman, 1981); and in huge quantity in W24 *Rubus fruticosus* in an overgrown field at Chelmarsh. It also occurs in W10 *Quercus robur* woodland margins at Shirlett Common and Birchen Park. A good place to look for it is along the Montgomery Canal between Queen's Head and Aston Locks, where it has been recorded since 1841 (Leighton).



***Solidago virgaurea* L.**  
**Goldenrod**

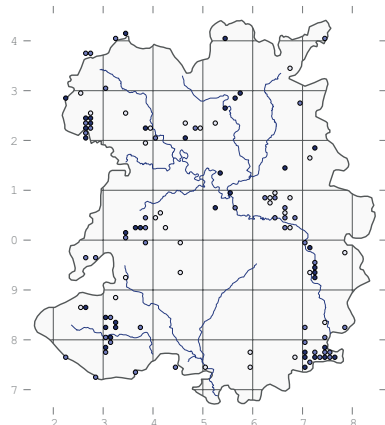
Native. Local. Decreasing. Axiophyte: woodland and grassland.

First record: L. Brown, 1726, 'Combe Floyd.'

Occasional in woodlands and grassland adjacent to woods, especially on calcareous soils. It is recorded in CG2 *Avenula pubescens* grassland on Llynclys Hill and quarries such as Dolgoch and Llynclys. Also in many W8 *Fraxinus excelsior* woods, such as Blakeway Coppice and Blodwel Rock



and more neutral to acid woods in the Wyre Forest, at Bury Ditches (J. Clayfield, 2001) and Sowdley Wood.



## *Solidago rugosa* Miller Rough-stemmed Goldenrod

Neophyte. Rare.

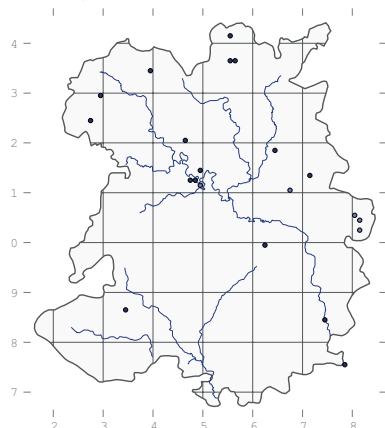
Established on a stone wall on the north side of the Severn in Ironbridge (G. Halliday, 2006, E).

## *Solidago canadensis* L. Canadian Goldenrod

Neophyte. Scattered. Increasing. Railways, roadsides, old gardens.

First record: B.R. Fowler, 1976, 'on rough ground by railway station, Albrighton.'

A garden escape, often established on railway embankments and waste ground. There are recent records of it at Merrington Green, Llynclys Hill, by the Severn Valley Railway at Woodend (D.H. Wrench, 2004), Prees Heath, the Old River Bed, Catsbitch Lane at Waters Upton, by the Severn at Bewdley, and in Much Wenlock.



## *Solidago gigantea* Aiton Early Goldenrod

Neophyte. Rare. Casual. Gardens, waste ground.

First record (as *S. serotina*): E.M. Rutter, 1955, 'in a lane close to Berwick Wharf.'

An occasional garden escape, recorded recently in Ellesmere (Trueman, 1997), on Ketley Pitmounds (P.S. Gateley, 2003) and on a roadside at Prees Heath (R.J. Swindells, 2012).

## *Aster × salignus* Willd. (*lanceolatus* × *novi-belgii*)

### Common Michaelmas-daisy

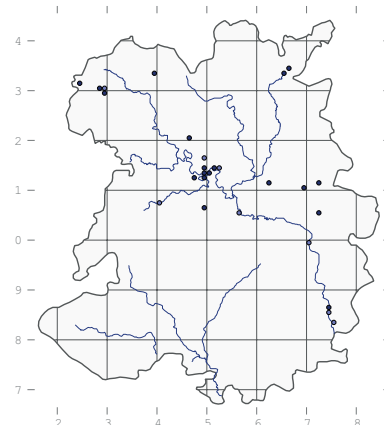
Neophyte. Scattered. Stable. River banks, railways and waste ground.

First record: P. Parker, 1974, Pimley Eyot.

There are no confirmed records for Shropshire of any species or hybrids of Michaelmas-daisy, but it seems likely that *A. × salignus* and *A. lanceolatus* Willd. (Narrow-leaved Michaelmas-daisy) are the commonest taxa here, as elsewhere in Britain. Sinker (1985) recorded the aggregate as *A. novi-belgii* L. but that species turns out to be quite rare. Here we have lumped them all as *A. × salignus* pending determination of specimens. People have recorded *novae-angliae* L., × *versicolor* Willd., *novi-belgii* L., × *salignus* Willd. and *lanceolatus* Willd., but they hybridize and back-cross freely, making identification exceedingly difficult, and none of these taxa can be said to have been confirmed yet. However, they all seem to occupy broadly similar habitats and for ecological purposes are better treated as one.

Michaelmas-daisy is occasional on muddy banks and islands in the Severn between the English Bridge, Shrewsbury and Hampton Loade, and it has been recorded by the Rea Brook at Pontesbury (B.R. Fowler, 1980). It is recorded on spoil heaps in Highly-Alveley Country Park (W.A. Thompson, 1980), Ketley (Thompson 1982) and Granville Country Park (R.M. Stokes, 1996). It used to be present at Oswestry Railway Station (M. Wainwright, 1986 – M.E. Roberts, 1992) until that site was redeveloped for a supermarket, and it has been found on a railway embankment at Oakengates (Stokes, 1994). Sometimes it turns up in quarries such as Llawnt (J.A. Thompson, 2003) and often it occurs on waste ground with garden rubbish, such as at Ellesmere (Trueman, 1997), Wrockwardine (Stokes, 1997) and Merrington

Green. It is only really persistent and naturalised along the Severn, the rest being short-lived outcasts.



## *Erigeron karvinskianus* DC. Mexican Fleabane

Neophyte. Rare. Increasing. Pavements and walls.

First record: W.A. Thompson, 1982, 'copiously established on the paved terrace on the frontage of Dudmaston Hall.'

In crevices in the pavements of various streets in Ludlow (J. Clayfield, 2001), on the side of a wall in Neen Savage (P.R. Green, 2010), and on Town Walls in Shrewsbury (D.H. Wrench, 2011).

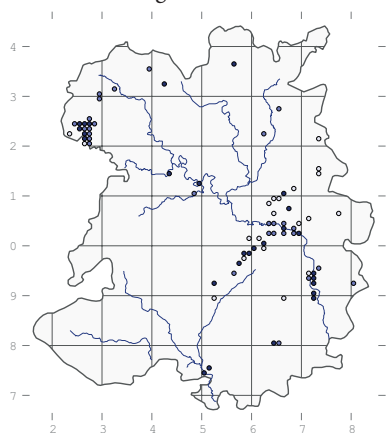
## *Erigeron acris* L. Blue Fleabane

Native. Local. Stable. Axioophyte: quarries, roadsides, walls and waste ground.

First record: J. Babington, 1803, 'on walls in Ludlow.'

A strong calcicole, most common on bare ground in limestone quarries in the Llynclys area and along Wenlock Edge. At Llanymynech Rocks it grows in CG2 *Avenula pubescens* grassland, and this is possibly its only semi-natural vegetation community in the county. Other places it has been recorded include walls in Ludlow, where it has been recorded many times, and roadsides in places such as Faintree (T. Purton, 1817), Hem Lane (W.H. Painter, 1899), Wellington (J. Ing, 2004) and by the A5 at Calcott (B. Laney, 2009). In the past it was common around lime kilns such as those at Lilleshall (T.C. Eyton, 1841) and Steeraway (Painter, 1897). Although it is largely restricted to limestone areas, it is too ruderal to be an axioophyte and it is mainly associated with human activity, so it probably has no native habitat in the county. Populations are stable in its core areas and sporadic outliers continue to

turn up, so overall it is stable. Good places to look for it are at Pattens Rock Quarry on Benthall Edge (A.K. Thorne, 2006) and along the top of Lea Quarry on Wenlock Edge.



### *Conyza canadensis* (L.)

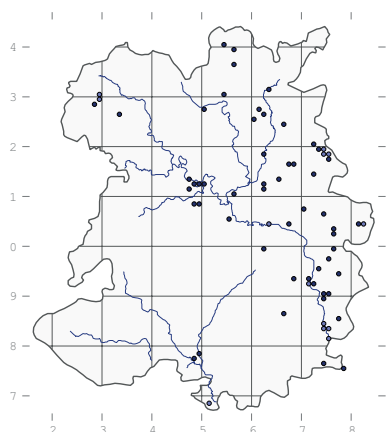
Cronq.

#### Canadian Fleabane

Neophyte. Local. Increasing. Railways, roadsides, disturbed ground, pavements.

First record: J.B. Johnson, 1946, Buildwas.

Mostly in towns, on railway lines and in quarries, but sometimes occurring in semi-natural habitats where there is much disturbance, as at Bomere Pool recently after tree clearance, when it was recorded in M23 *Juncus effusus* on the margin of the lake. In the 1970s and 1980s all the records were from railway lines, but it is now much more widespread in towns and villages in the lowlands.



### *Conyza sumatrensis* (Retz.)

E. Walker

#### Guernsey Fleabane

Neophyte. Rare.

'Three plants in a field at Venus Pool, sown with Quinoa for finches' (R.M. Stokes, 2007), and in Jewson's yard, Shrewsbury (2012).

### *Bellis perennis* L.

#### Daisy

Native. Widespread. Stable. Grassland, flushes and open woodland.

First record: Williams, c. 1800, 'pastures, very common.'

In a wide variety of grassland types, particularly damper ones, including CG2 *Avenula pubescens* at Craig Sychtyn, Moelydd and the Novers (Trueman, 1981); CG3 *Bromopsis erecta* at Hilltop (D.H. Wrench, 1994), Lea Quarry and Moelydd; CG7 *Thymus polytrichus* at Nantmawr Quarry and Presthope; CG10 *Helianthemum nummularia* at Minton Batch (R. Tapper, 1983); MG5 *Festuca rubra* at Hayton's Bent (Wrench, 1994), Oreton and Venus Pool; MG6 *Cynosurus cristatus* at Ruewood Pastures and Earlsdale; MG7 *Lolium perenne* at Rudge (Trueman, 1981); and MG8 *Caltha palustris* at Crose Mere, Morton Pool and Ruewood.

It is also recorded in M22 *Juncus subnodulosus* at Sweeny Fen; M23 *J. effusus* at Upper Darnford (Tapper, 1983), Gogbatch (C.M. Owen, 1983) and Stapeley Hill (Trueman, 1981); OV21 *Plantago major* in a garden at Pant (Trueman, 1981); OV22 *Taraxacum officinale* at Viroconium; and U1 *Rumex acetosella* at Lilleshall Quarry and Prees Heath. In wetter habitats it is found in M29 *Potamogeton polygonifolius* soakways in Callow Hollow (Tapper, 1983); OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979) and OV32 *Ranunculus sceleratus* on the margin of White Mere. In woods it is recorded in W6 *Salix × fragilis* at Betton Pool; W8 *Fraxinus excelsior* at Blodwel Rock and W24 *Rubus fruticosus* scrub at High Rock (both Trueman, 1981).



### *Tanacetum parthenium* (L.)

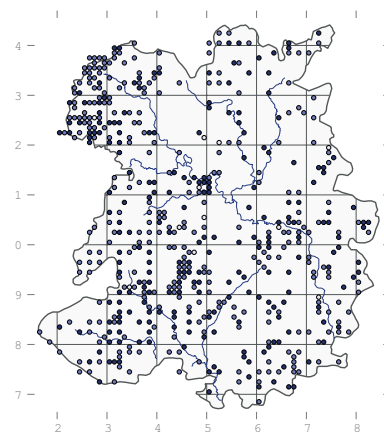
#### Schultz-Bip.

#### Feverfew

Archaeophyte. Widespread. Stable. Gardens, waste ground, roadsides, river banks.

First record (as *Pyrethrum parthenium*): Williams, c. 1800, 'ditch banks and waste places about villages, common.'

Very common as a garden escape, rarely persisting in more natural habitats. Near Albrighton it grows in secondary W8 *Fraxinus excelsior* woodland with an array of other introductions on a roadside bank. Elsewhere it grows in a variety of disturbed habitats and even on walls.



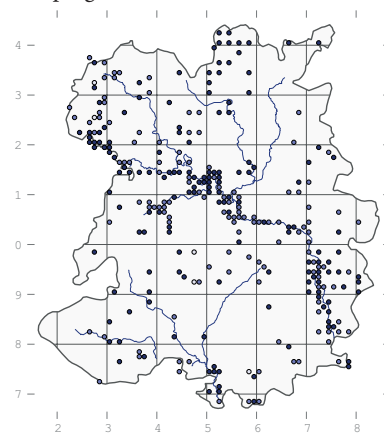
### *Tanacetum vulgare* L.

#### Tansy

Native. Local. Stable. Riverbanks, gardens,

First record: Williams, c. 1800, 'banks of the Severn and sides of roads.'

Native on river banks in communities such as MG1 *Arrhenatherum elatius* grassland and W6d *Sambucus nigra* woodland by the Severn in Shrewsbury, and also widely grown in gardens and escaping onto roadsides.



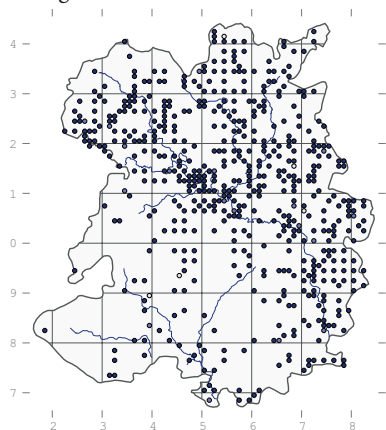
## *Artemisia vulgaris* L.

### Mugwort

Archaeophyte. Widespread. Stable. Roadsides, waste ground, field margins,

First record: Williams, c. 1800, 'hedges, common.'

Widespread in the lowlands on disturbed soils, especially on roadsides. It has been recorded in OV23 *Dactylis glomerata* on waste ground in Newport; OV25 *Cirsium arvense* in an arable field at Norton, Stockton (both Trueman, 1981); W6d *Sambucus nigra* woodland by the Severn in Shrewsbury; and W8 *Fraxinus excelsior* woodland on a roadside bank in Albrighton.

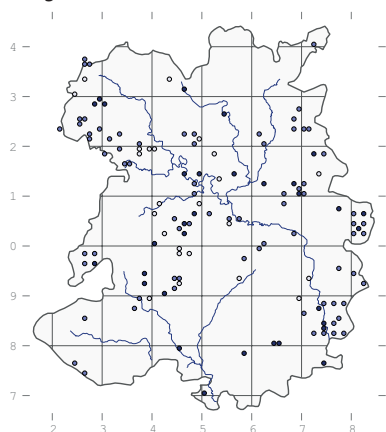


## *Artemisia absinthium* L.

### Wormwood

Archaeophyte. Scattered. Decreasing. Roadsides and waste ground.

First record: Williams, c. 1800, 'sides of roads and waste grounds in and near villages, common.'



Formerly a widely cultivated herb, but now rather rare on roadsides and railways. At Oretton it grows on bare patches in MG5 *Festuca rubra* grassland in a horse field, and at Albrighton it occurs in W8 *Fraxinus excelsior* woodland on a roadside bank. A good place to see it is by the Severn Valley Railway at Highley, where it is

well established in several places. There are also recent records of it in Wrockwardine churchyard, by the M54 at Timlet (C. Newton, 2010), by the A5 at Mile House, Oswestry, and at Onibury (P.R. Green, 2010).

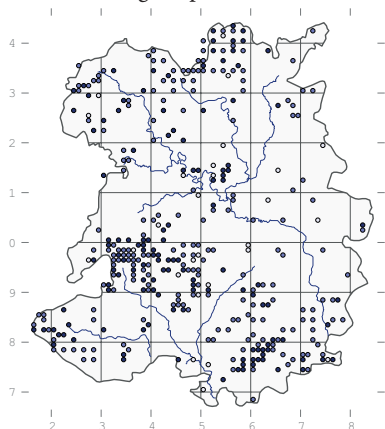
## *Achillea ptarmica* L.

### Sneezewort

Native. Local. Decreasing. Axiophyte: grassland, flushes,

First record: Williams, c. 1800, 'moist pastures and hedges, not uncommon.'

Occasional in damp grassland such as MG5c *Danthonia decumbens* meadows at Rushbury, Glasshouse Green, Hill Houses and Cleeton St Mary (all D.H. Wrench, 1994); MG9 *Deschampsia cespitosa* at Hill Houses; M23 *Juncus effusus* at Haughmond Hill; and M24 *Cirsium dissectum* at Black Coppice. It often occurs in slightly rank grassland and on the edge of patches of scrub.



## *Achillea millefolium* L.

### Yarrow

Native. Widespread. Stable. Grassland.

First record: Williams, c. 1800, 'meadows and pastures, very common.'

In many types of grassland, including CG2 *Avenula pubescens* meadows on Wenlock Edge, Llynclys Hill and at the Novers; CG3 *Bromopsis erecta* at Hilltop and the Foxholes; CG7 *Thymus polytrichus* at Presthope; CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Llynclys Hill; MG1 *Arrhenatherum elatius* road verges throughout; all stands of MG5 *Festuca rubra* grassland; many stands of MG6 *Cynosurus cristatus* grassland, as at Becks Field; M22 *Juncus subnodulosus* at Sweeny Fen (A. Hillman, 1992); OV22 *Taraxacum officinale* at Viroconium; OV23 *Dactylis glomerata* on road verges throughout, as at Cosford (Trueman, 1981) and Monkmoor; U1 *Rumex acetosella* at Prees Heath, Ryton Church and Titterstone Clee

(A.K. Thorne, 1999); U4 *Agrostis capillaris* on Brown Clee, Cwm Collo and Westcott Hill (Trueman, 1981); W24 *Rubus fruticosus* scrub on a road verge at Abdon and on waste ground at Ironbridge (Trueman, 1981).



## *Achillea filipendulina* Lam.

### Fern-leaf Yarrow

On a sandy roadside verge at Woodcote (SJ773154, Lockton, det. Whild 2010, BIRM).

## *Achillea nobilis* L.

### Noble Yarrow

'Recorded as a casual at Buildwas' (Lloyd & Rutter 1957), but the details have not been traced.

## *Chamaemelum nobile* (L.)

### All.

### Chamomile

Native. Rare. Last recorded in 1961. Roadsides.

First record (as *Anthemis nobilis*): Williams, c. 1800, 'at the north-east corner of Cound Moor by the side of a small rill near the finger post, plentifully; upon Bayston Hill and Bicton Heath; by the side of the road as you ascend the hill from Lidbury (the new way) to Bishops Castle.'

Formerly on roadsides and common land, presumably as a casual on the edge of its range. It was last recorded by the Cound Brook at Boreton (E.M. Rutter, 1961).

## *Anthemis arvensis* L.

### Corn Chamomile

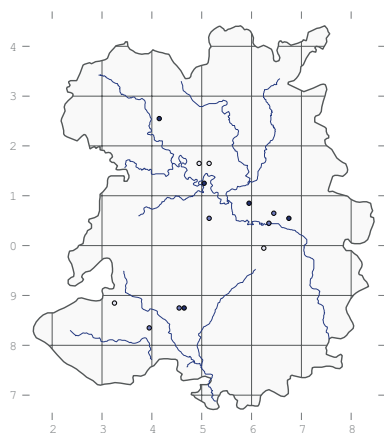
Archaeophyte. Rare. Stable. Arable fields.

First record: Williams, c. 1800, 'sides of roads, clover and corn fields.'

Rare in arable fields, as on a field edge at Alcaston (H.M. Davidson, 1990), but more normally now found in seed mixes or roadsides, as on a road verge at Eaton Constantine (SJ595085, R.M. Stokes, 1996), a roadside in



Shrewsbury (SJ507127, 2006) and on bare ground in a new housing development in Lightmoor (SJ675059, 2008) where it was introduced in a wild flower seed mix.

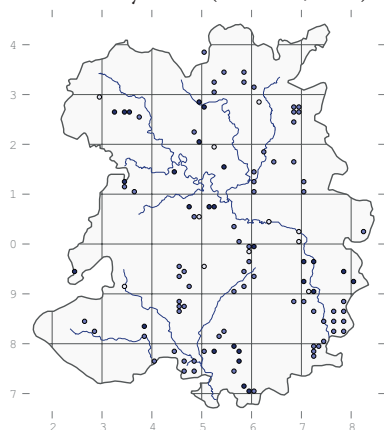


### *Anthemis cotula* L. Stinking Chamomile

Archaeophyte. Scattered. Decreasing.  
Axiophyte: arable fields.

First record: Williams, c. 1800, 'pastures and sides of roads, common.'

An uncommon arable weed, with recent records from arable fields at Berrington, Pimhill, Haughmond Hill, Henleyhill (P.R. Green, 2009) and a roadside at Lyth Hill (K.K. Bell, 2009).



### *Anthemis tinctoria* L. Yellow Chamomile

Just two records: at Bayston Hill (Hamilton, 1894) and on a roadside at Boreton (SJ518072, 2010) where wildflower seed had been sown.

### × *Tripleurothemis maleolens* (P. Fourn) Stace (*Anthemis cotula* × *Tripleurospermum inodorum*)

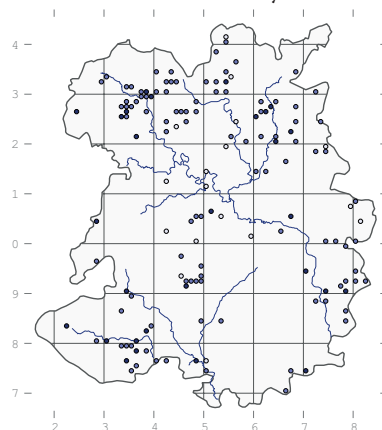
'Two plants on a ploughed but unsown headland at the edge of a barley field near Hilton, SO7895' (Q.O.N. Kay, 1969, NMW).

### *Glebionis segetum* (L.) Fourr. Corn Marigold

Archaeophyte. Scattered. Decreasing.  
Axiophyte: arable fields.

First records (as *Chrysanthemum segetum*): Williams, c. 1800, 'plentifully about Harley, Church Stretton, St Giles's Fields, and other gravelly soils.'

Occasional in arable fields in the lowlands, mostly wheat or barley, but sometimes in beet or other root crops. It also comes up from bird seed ('old chicken run at Benthall', G. Potts, 1919), in gardens ('old walled kitchen garden at Oakly Park', J.A. Thompson, 2005) and in wildflower seed mixes, as at Lightmoor in 2008. Older records often mention fields full of it, but most recent ones are for small numbers in headlands or by roads. The only place where it has been recorded as abundant recently is at Hine Heath (SJ606256, 2009), where there were many plants in a field of potatoes. It does not tend to grow in the same place for long, so it is difficult to predict where it may be found. Fields on sandy former heaths on the plain are the most likely places for it, but it is also often recorded in the vicinity of Clun.



### *Leucanthemum vulgare* Lam.

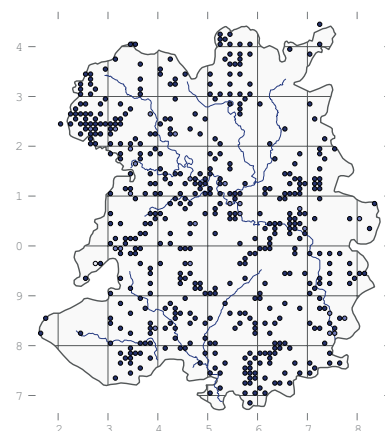
#### Oxeye Daisy

Native. Widespread. Stable. Meadows, pastures and quarries.

First record (as *Chrysanthemum leucanthemum*): Williams, c. 1800, 'meadows and pastures, common.'

In unimproved and semi-improved grazed grassland such as CG2 *Avenula pubescens* in Blackbridge Quarry, on Llanymynech Rocks and Pant Roadside Verge (Trueman, 1981); CG3 *Bromopsis erecta* in Ballstone Quarry, Lea Quarry and meadows at Stretton Westwood (D.H. Wrench, 1995); MG5 *Festuca rubra* meadows throughout; and U1 *Rumex acetosella* grassland at Prees Heath. It favours some disturbance and bare ground, and it is

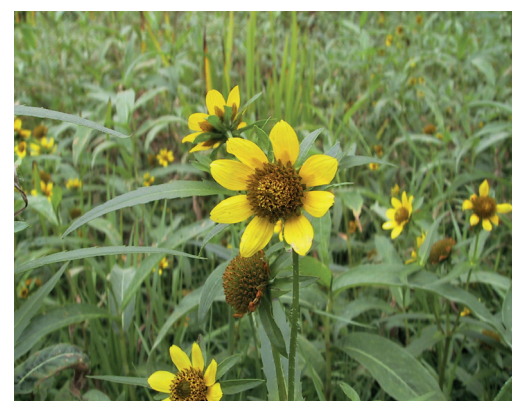
quick to colonise new sites such as the seeded meadows at Venus Pool, which are reasonable MG5 grassland, and it is often included in seed mixes, as with an OV23 *Dactylis glomerata* road embankment at Monkmoor.



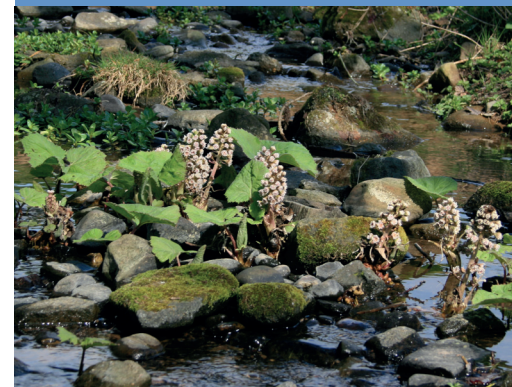
### *Leucanthemum* × *superbum* (Bergmans ex J. Ingram) Kent (*lacustre* × *maximum*)

#### Shasta Daisy

A common garden plant, occasionally found on roadsides or with dumped garden waste, but seemingly not persisting. There are recent records of it at Stokesay Castle (J.A. Thompson, 1995), where it was probably planted, on a roadside at Prees Higher Heath, and on waste ground at Cleestanton (I.P. Green, 2009).



*Bidens cernua* var. *radiata* at Brown Moss



*Petasites hybridus*

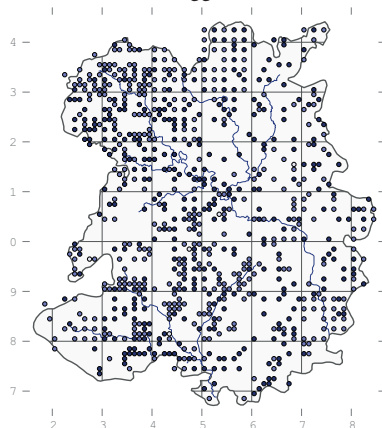
## *Matricaria chamomilla* L.

### Scented Mayweed

Archaeophyte. Widespread. Stable. Arable fields, disturbed ground, roadsides.

First record: Williams, c. 1800, 'pastures and sides of roads, common.'

In OV10 *Senecio vulgaris* in an arable field in Welshampton (Trueman, 1981); OV13 *Capsella bursa-pastoris* at Priorslee (Trueman, 1981) and Upton Cressett; OV14 *Urtica urens* at Edgmond (Trueman, 1981); OV15 *Anagallis arvensis* at Filletts Farm; OV18 *Polygonum aviculare* at Edgmond (Trueman, 1981); and OV31 *Rorippa palustris* on the margin of Fenemere (M.J. Wigginton, 1979).

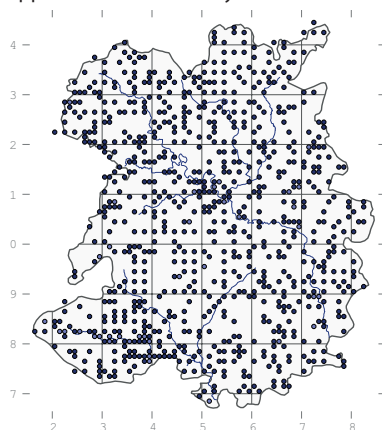


## *Matricaria discoidea* DC.

### Pineapple Weed

Neophyte. Widespread. Stable. Field margins, bare ground

First (known) record: J.C. Melvill, 1914, 'by the ford, Meole Brace; a few plants only. I believe this plant has been previously recorded from the neighbourhood of Whitchurch, so this is the second appearance in the county.'



In OV10 *Senecio vulgaris* community in an arable field in Welshampton; an OV14 *Urtica urens* field at Edgmond; OV18 *Polygonum aviculare* field at Edgmond; and OV25 *Cirsium arvense* in a field margin at Norton, Stockton

(all Trueman, 1981). It is very common on patches of bare ground everywhere, even in semi-natural habitats such as MG10 *Holcus lanatus* rush-pasture at Ruewood.

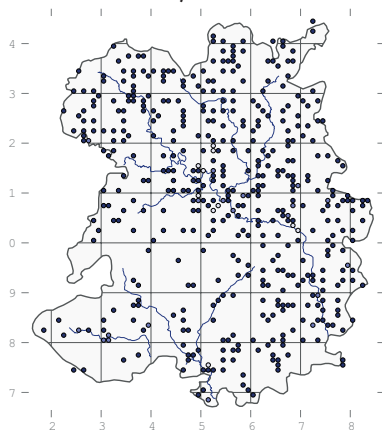
## *Tripleurospermum inodorum* (L.) Schultz-Bip.

### Scentless Mayweed

Archaeophyte. Widespread. Stable. Arable fields, roadsides, waste ground.

First record (as *Pyrethrum inodorum*): Williams, c. 1800, 'pastures and sides of roads, common.'

Widespread, but less common in the uplands. Recorded in OV10 *Senecio vulgare* community in a field margin at Lower Faintree and on waste ground at Shifnal (Trueman, 1981); OV14 *Urtica urens* in fields at Rudge Heath (Trueman, 1981) and the Sands; OV22 *Taraxacum officinale* in a sand quarry at Bridgnorth (Trueman, 1982); OV23 *Dactylis glomerata* on roadsides at Monkmoor and Uppington (Trueman, 1981); OV25 *Cirsium arvense* in a field margin at Kingshead; and OV32 *Ranunculus sceleratus* on the bank of the Roden at Tilley.



## *Senecio × albescens* Burb. & Colgan (*cineraria* × *jacobaea*)

Recorded by William Borrer in 1836 in Bishops Castle – apparently the first time this hybrid was ever found, but no specimen has been traced.

## *Senecio jacobaea* L.

### Ragwort

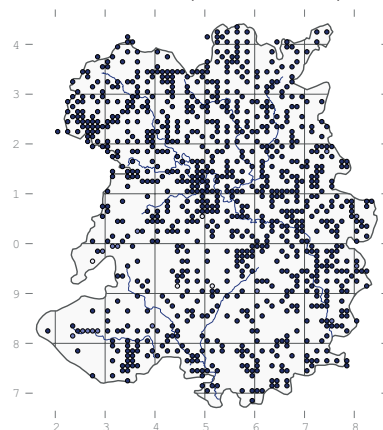
Native. Widespread. Stable. Meadows, quarries, bare ground.

First record: Williams, c. 1800, 'pastures and ditch banks, common.'

Occasional in grassland, never abundant in a closed sward but sometimes thriving in overgrazed fields. It is recorded in CG2 *Avenula pubescens* grassland at Jones's Rough and Windmill Hill; CG3 *Bromopsis erecta* at

Ballstone Quarry, Lea Quarry and the Foxholes; CG7 *Thymus polytrichus* at Farley and Nantmawr quarries; MG1 *Arrhenatherum elatius* at Blackfriars Meadow, Ropewalk Meadow and Shelton Rough; in many stands of MG5 *Festuca rubra* as on Llyncllys Hill and at Cole Mere; MG8 *Caltha palustris* at Morton Pool (D.H. Wrench, 1991); MG9 *Deschampsia cespitosa* at Cole Mere and in a glade in Easthope Wood; M22 *Juncus subnodulosus* fen-meadow at Sweeny Fen; OV23 *Dactylis glomerata* on road verges at Monkmoor and Shipley and on waste ground at Newport (both Trueman, 1981); and in many stands of U1 *Rumex acetosella*, as at Attingham Park, Haughmond Hill and Prees Heath.

Elsewhere, it is found in OV22 *Taraxacum officinale* vegetation on waste ground in Buildwas Sand Quarry (Trueman, 1982); OV24 *Urtica dioica* on eroded slopes on Abbot's Castle Hill (Trueman, 2005); OV26 *Epilobium hirsutum* at Bomere Pool; OV30 *Bidens tripartita* on the margin of Newton Mere; S5 *Glyceria maxima* swamp at Blake Mere; and in W8 *Fraxinus excelsior* woodland at Blakeway Coppice and Blodwel Rock (Trueman, 1981).



## *Senecio × ostenfeldii* Druce (*aquaticus* × *jacobaea*)

Occasional wherever the parents meet, most typically by the Severn in and around Shrewsbury where it was first recorded by Perring in 1962. It has also been recorded at Hendre and alongside the Llangollen Canal at Blake Mere.

## *Senecio aquaticus* Hill

### Marsh Ragwort

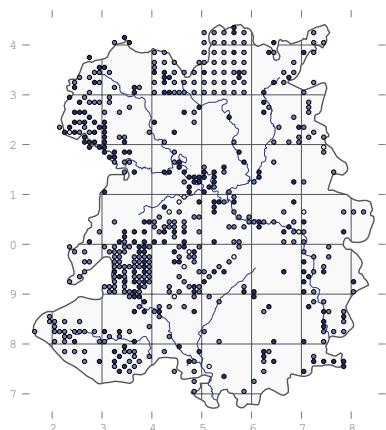
Native. Local. Stable. Wet grassland, wet woods, margins of meres and river banks.

First record: Williams, c. 1800, 'ditches, moors and other moist grounds, common.'

In a variety of wetland habitats, including MG8 *Caltha palustris*



grassland at Morton Pool and Ruewood Pastures; M22 *Juncus subnodulosus* fen-meadow at Morton Pool (D.H. Wrench, 1991); M23 *J. effusus* at Black Coppice, Bomere Pool, Newton Mere and elsewhere; M36 *Chrysosplenium oppositifolium* in a quarry Poles Coppice; OV30 *Bidens tripartita* around a pool at Black Coppice and Marton Pool, Chirbury (M.J. Wigginton, 1979); W5 *Alnus glutinosa* woodland at Top Pool; and W6 *Salix* × *fragilis* on Haughmond Hill.



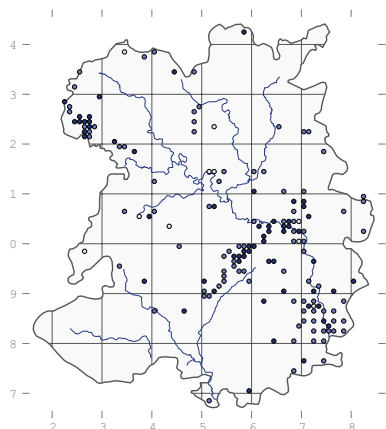
### *Senecio erucifolius* L.

#### Hoary Ragwort

Native. Local. Stable. Axiphyte: limestone grassland and fen.

First record (as *S. tenuifolius*): Williams, c. 1800, 'ditch banks, woods and thickets in a clay soil, common.'

In calcareous habitats, often on bare patches in limestone grassland. It is recorded in CG2 *Avenula pubescens* grassland at Dolgoch Quarry; MG5 *Festuca rubra* at the Foxholes; MG8 *Caltha palustris* at Ruewood (Trueman, 1980); and M23 *Juncus effusus* at Balmer Heath.



### *Senecio inaequidens* DC.

#### Narrow-leaved Ragwort

Neophyte. Rare.

A recent colonist, first found by the A5

at Rhoswiel by B.J. Laney in 2008 and subsequently along the railway line east of Wellington station (2009) and by the M54 at Timlet (Laney, 2010).

### *Senecio sarracenicus* L.

#### Broad-leaved Ragwort

Recorded at Dudston by G. Bowles and W. Coote in 1632 and 'in a watery lane in the hamlet of Hintz' by W. Corbett in 1841.

### *Senecio doria* L.

#### Golden Ragwort

Collected by B.E.H. Potter at Pimhill in 1975 (det. Sinker) and well established at Merrington Green, where it was first recorded by J. Martin in 1989.

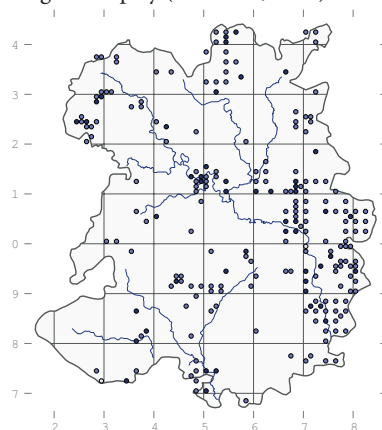
### *Senecio squalidus* L.

#### Oxford Ragwort

Neophyte. Scattered. Stable. Railways, roadsides, waste ground.

First record: W.B. Allen, 1905, Knighton Station.

Frequent on roadsides and waste ground, mainly in towns and near railway lines. A typical habitat for it is in OV23 *Dactylis glomerata* on a road verge at Shipley (Trueman, 1981).



### *Senecio* × *subnebrodensis*

Simonkai (*squalidus* × *viscosus*)

Recorded at Oswestry Railway Station (SJ295299) (a site now redeveloped for a supermarket) by E.D. Pugh in 1978 (det. P.M. Benoit) and by Perring in 1988.

[*Senecio cambrensis* Rosser, Welsh Groundsel

In 1970 *Senecio cambrensis* was believed to be expanding its range, as several new sites had just been discovered in north Wales. At that time D.H. Kent made a casual observation that he had seen it at Oswestry and Ludlow, and these 'records' found their way into the botanical literature.

They were, however, not supported by voucher specimens nor ever repeated, so it seems he may have been mistaken.]

### *Senecio vulgaris* L.

#### Groundsel

Native. Widespread. Stable. Roadsides, field margins, disturbed ground.

First record: Williams, c. 1800, 'gardens and other cultivated grounds, common.'

Characteristic of OV10 *Senecio vulgaris* community in field margins at Eudon George and Lower Faintree, and also recorded in OV14 *Urtica urens* in a field at Rudge Heath (Trueman, 1981); OV15 *Anagallis arvensis* in a field at Filletts Farm; OV20 *Sagina procumbens* on ruins at Haughmond Abbey (Trueman, 1981) and walls in Shrewsbury; OV22 *Taraxacum officinale* waste ground at Buildwas Sand Quarry (Trueman, 1982) and ruins at Viroconium; and OV23 *Dactylis glomerata* on a roadside at Shipley (Trueman, 1981). It is often present on bare ground in semi-natural habitats such as OV32 *Ranunculus sceleratus* on bare mud on the margin of Oxon Pool; OV35 *Lythrum portula* around Newton Mere; W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981); and W24 *Rubus fruticosus* at Lower Wallop.

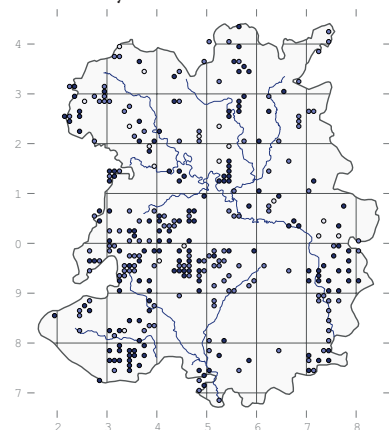
### *Senecio sylvaticus* L.

#### Heath Groundsel

Native. Local. Stable. Heaths, rock outcrops and acid grassland.

First record: Williams, c. 1800, 'ditch banks in a sandy soil – particularly in a black sand and open dry peat earth.'

Most common in U1 *Rumex acetosella* grassland in places like Charlton Hill and Haughmond Hill, and recorded in OV23 *Dactylis glomerata* at Dorrington Sand Quarry. It is frequent on the hills as high as 430 m at Gatten Plantation (SO3798, 2002). A good place to see it is on Lyth Hill, where it was first recorded by H.M. Auden in 1907.





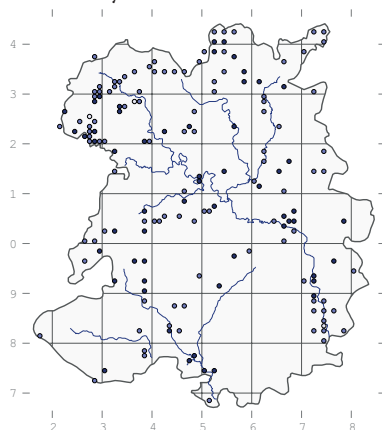
***Senecio viscosus* L.**

**Sticky Groundsel**

Neophyte. Local. Stable. Roadsides, quarries, arable fields, waste ground.

First records: T.P. Diamond, 1891, Sweeney and Rednal.

On disturbed soils, as in OV25 *Cirsium arvense* community on a field margin at Kingshead. It was abundant in Haughmond Quarry in 2006. Other recent sites include a farmyard at Eyton on the Weald Moors, a water treatment plant at Malehurst, stables in Mickley and a derelict building lot in Shrewsbury.



*Sambucus ebulus* at Haughmond Hill



*Lonicera periclymenum* (Dan Wrench)

***Brachyglottis × jubar* P.D. Sell**

**Shrub Ragwort**

One plant naturalised at Shrewsbury Sewage Works (SJ522137, R.M. Stokes, 1997).

***Sinacalia tangutica* (Maxim.)**

R. Nordenstam

**Chinese Ragwort**

Well established at Craig-llwyn Quarry, where it was first recorded by E.D. Pugh, c. 1984.

***Ligularia dentata* (A. Gray)**

H. Hara

**Leopard-plant**

Recorded at Broncroft by H.J.M. Bowen in 1984.

***Doronicum pardalianches***

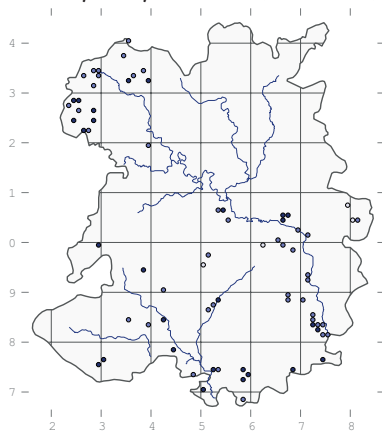
L.

**Leopard's-bane**

Neophyte. Scattered. Stable. Roadsides, hedge banks and riversides.

First record: W. Withering, 1787, 'banks of the Severn below Bridgenorth.'

Well established in scattered locations throughout the county, in W8 *Fraxinus excelsior* woodland in places like the Borle Brook at New England and in Loamhole Dingle. It can be very persistent – it has been known at Welsh Frankton since 1920 (O.M. Feilden) and in Candy Valley since 1955 (E.M. Rutter).



***Tussilago farfara* L.**

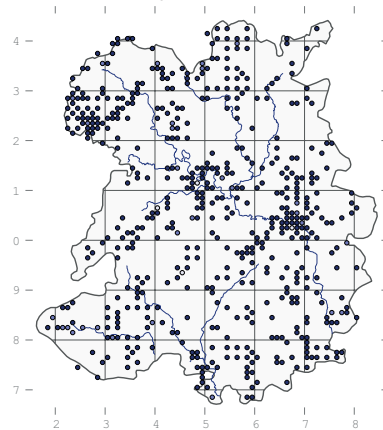
**Colt's-foot**

Native. Frequent. Stable. Roadsides, waste ground, river banks.

First record: Williams, 1800. 'Moist pastures and cornfields. Common'.

In open habitats, where it colonizes readily as a pioneer species. It is found in CG2 *Avenula pubescens* grassland at Craig-llwyn and Dolgoch quarries; CG7 *Thymus polytrichus* at Farley and

Lilleshall quarries; M13 *Palustriella commutata* at Trefonen Marshes; M22 *J. subnodulosus* at Sweeny Fen; OV23 *Dactylis glomerata* at Dorrington Sand Quarry (Trueman, 1981); and OV28 *Agrostis stolonifera* in Withybed Wood (SO7677, J. Bingham, 1986).



***Petasites hybridus* (L.) P.**

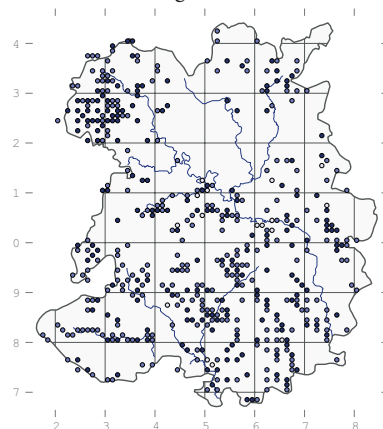
Gärtn., B. Mey. & Scherb.

**Butterbur**

Native. Local. Stable. Roadsides, river banks and stream sides.

First record: Withering, 1787, Wellington.

Usually found in rather open situations such as river banks and roadsides, but it has also been found in W8 *Fraxinus excelsior* woodland near the Borle Brook at New England.



***Petasites japonicus* (Siebold & Zucc.) Maxim.**

**Giant Butterbur**

Just two records: by the River Clun at Purslow Farm (Whild, 1983) and 'a mass of plants by a converted barn at Heath Common' (J. Mason, 2009).

***Petasites albus* (L.) Gärtn.**

**White Butterbur**

Neophyte. Rare.

'By the stream in Badger Dingle' (SO765993, S. O'Donnell, 1995 and 2012).

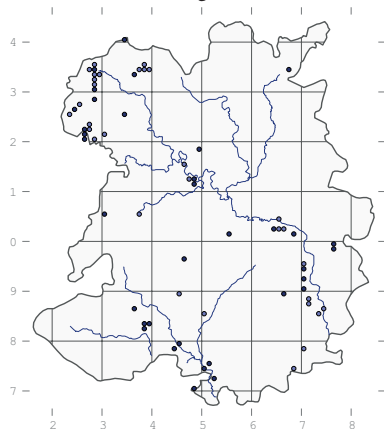
***Petasites fragrans*** (Villars) C. Presl

### Winter Heliotrope

Neophyte. Scattered. Stable. Roadsides, churchyards, riverbanks.

First record: Melvill, 1913, Badger Dingle.

An attractive creeping perennial found mainly on roadside verges but also associated with the Severn Valley below Bridgnorth where it is found naturalized on the banks of the Severn at Hampton Loade (W. Thompson, 1980). It is most frequent in the north-west of the county where it is especially abundant on the roadside at Pant (Pugh, 1970).



***Calendula officinalis*** L.

### Pot Marigold

Neophyte. Scattered. Casual. Gardens, disturbed ground.

First record: B.R. Fowler, 1977, Donnington tip, Lilleshall.

An annual grown as a garden plant and often found on road verges and disturbed habitats not far from dwellings. There are recent records of it on dumped topsoil at Lower Broughton Farm (D.L. Buckingham, 2000), by the A5 at Ensdon, on disturbed soil by roadworks at Morda (R.A. Dawes, 2006) and on the wall above the allotments at Town Walls, Shrewsbury (2010).

***Ambrosia artemisiifolia*** L.

### Ragweed

Neophyte. Scattered. Casual. Waste ground and gardens.

First record: E.D. Pugh, 1963, Sidings by the station, Llanymynech.

Usually introduced with bird seed, as it is a persistent weed of sunflower fields in some parts of the world. It has been recorded as a garden throw-out at Water's Upton (SJ630197, 2004), on the towpath of the Severn in Shrewsbury (SJ495128, 2004), at Brown Moss (SJ562394, 2006) and in a patch of waste ground with garden throw-outs at Sodylt Bank in (SJ344399, 2009).

***Xanthium strumarium*** L.

### Rough Cocklebur

One plant in a field of oats sown for birdseed at Venus Pool (SJ551058, R.M. Stokes, det. E.J. Clement, 2007).

***Rudbeckia amplexicaulis***

Vahl

### Clasping Coneflower

'In waste ground at Benthall House' (G. Potts, det. E.G. Baker, 1922).

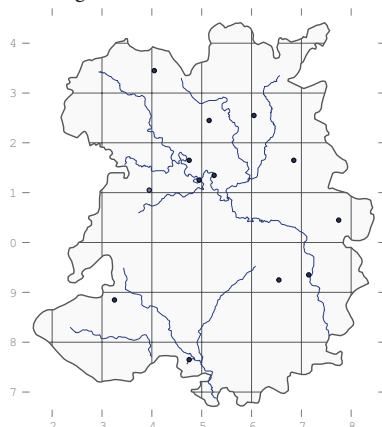
***Helianthus annuus*** L.

### Sunflower

Neophyte. Scattered. Casual. Waste ground, gardens.

First record: Sinker, 1982, roadside verge near Yockleton.

In gardens as an ornamental plant, as a casual on waste ground from bird seed, and sometimes grown in arable fields, after which there are often crop volunteers for a few years, as at Rookery farm, Shifnal, in 2009. It has also been recorded at the old Monkmoor Sewage Works, which is managed as a nature reserve (R.M. Stokes, 1997) and on the shore of the Mere at Ellesmere, where tourists feed the ducks (D.L. Buckingham, 2000).



***Helianthus × laetiflorus***

Pers. (*rigidus* × *tuberosus*)

### Perennial Sunflower

Neophyte. Rare.

Established on a road verge on Hazler Hill (D.J. Nisbet, 2005).

***Guizotia abyssinica*** (L.f.)

Cass.

### Niger

Neophyte. Rare.

On waste ground at Coton Hill (R.M. Stokes, 2006); in abundance on a farm track at Crickmery in 2009; and on gravel at the riverside in Castlefields, Shrewsbury in 2010 (D.H. Wrench).

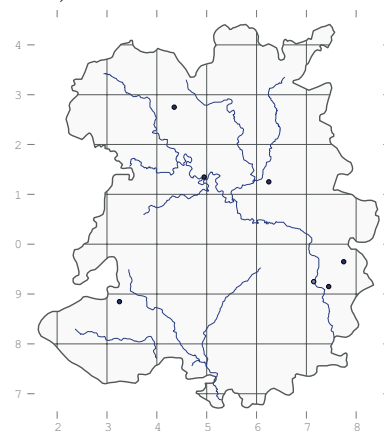
***Galinsoga parviflora*** Cav.

### Gallant Soldier

Neophyte. Scarce. Increasing. Waste ground, pavements.

First record: M.G. Jones, 1971, Bridgnorth Low Town.

On pavements in Shrewsbury; in a plant nursery at Hilton; by a footpath in Quatford Wood (both J. Brown, 1995); in Bishops Castle (S. Kingsbury, 2004); in a field gateway in Cockshutt (A.K. Thorne, 2005); and at Wrockwardine Church (J. Shanklin, 2010).



***Galinsoga quadriradiata***

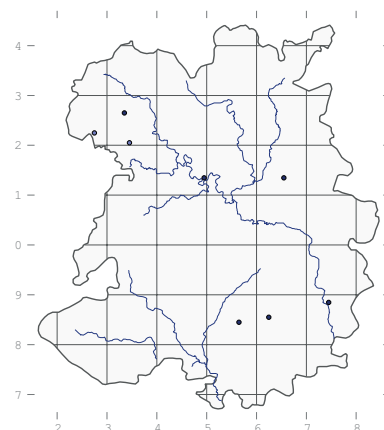
Ruiz Lopez & Pavon

### Shaggy Soldier

Neophyte. Scarce. Increasing. Waste ground, pavements, arable fields.

First record: E.D. Pugh, 1967, 'in the garden of the Post Office in Pant.'

On pavements in Shrewsbury (J. Martin, 1993); by the Montgomery Canal at Aston Locks; in a potato field at Apley; in a field of asparagus at Dudmaston (J. Handley, 2009); and at Chatmore.

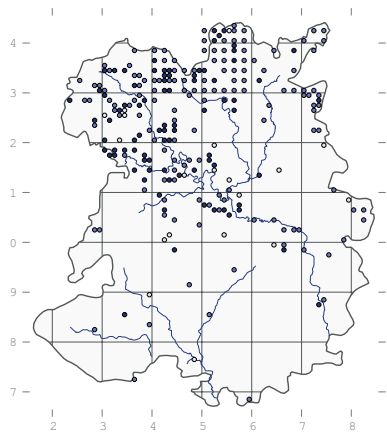


## *Bidens cernua* L.

### Nodding Bur-marigold

Native. Local. Stable. Axiophyte: ponds, swamps, marshy grassland.

First record: Williams, c. 1800, 'edges of pools and ditches, common; var. *minima*, common.'



An annual, typical of ponds and lake margins that dry out during the summer, and in similar situations in marshy grassland and swamps. It can rapidly become very abundant, as happens at Brown Moss in some years. Benson remarked on a similar event at Underhill Hall in 1893, where the plants were all tiny (Williams's var. *minima*, which was not recognised by subsequent authors).

Its most notable habitat is OV30 *B. tripartita* community on mud around the edges of pools, as at Black Coppice, Marton Pool, Chirbury (M.J. Wigginton, 1979), Newton Mere and White Mere (Wigginton, 1979). It is also recorded in OV31 *Rorippa palustris* at Brown Moss and OV32 *Ranunculus sceleratus* at Crose Mere and Oxon Pool.

In marshy grassland it is found in MG8 *Caltha palustris* at Crose Mere; MG10 *Holcus lanatus* at Brown Moss; M22 *Juncus subnodulosus* at Crose Mere (Wigginton, 1979); M23 *J. effusus* at Ebnal Pool (Trueman, 1981), Oxon Pool and elsewhere. In swamps, there are records for S12 *Typha latifolia* at Snipe Bog, Shrawardine Pool and Battlefield Pond; S14 *Sparganium erectum* pools on Old Oswestry; S17 *Carex pseudocyperus* at Oxon and Shrawardine pools; and S27 *Comarum palustre* at Bomere and Shomere Pools (Wigginton, 1979), Brown Moss (Trueman, 1983) and Snipe Bog. Finally, it occurs in some wet woods, such as W5 *Alnus glutinosa* at Crose Mere and both W6b *Salix × fragilis* and W10 *Quercus robur* at Shrawardine Pool.

The best place to see it is doubtless Brown Moss, where it has been regularly recorded since the 1950s (Bigwood and Rutter). Many plants there are var. *radiata* DC., with prominent ray florets. This form has also been recorded at Hickory Hollow (R. Ford, 1998), Edgerley (A.K. Thorne, 2003) and Cobscot.

## *Bidens tripartita* L.

### Trifid Bur-marigold

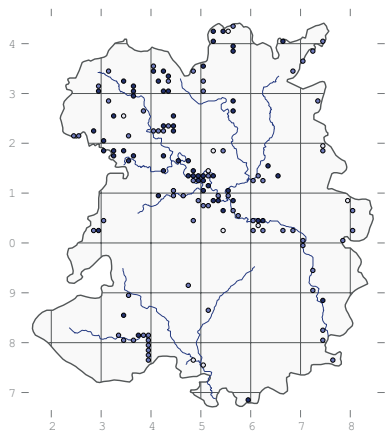
Native. Local. Stable. Axiophyte: muddy pools, river banks, swamps.

First record: Williams, c. 1800, 'edges of pools and ditches, common.'

In shallow water and muddy swamps in full sunlight or half shade. Its most typical habitat is OV30 *B. tripartita* community on bare mud around meres such as Marton Pool, Newton Mere and White Mere (all M.J. Wigginton, 1979), at Aber Tanat Oxbow Lake (Trueman, 1981) and on mud banks by the Severn in Shrewsbury.

It is also recorded in A8 *Nuphar lutea* at Betton Pool; M23 *Juncus effusus* at Cole Mere; OV31 *Rorippa palustris* at Fenemere (all Wigginton, 1979); OV32 *Ranunculus sceleratus* at White Mere; S27 *Comarum palustre* at Brown Moss (Trueman, 1983); and W5 *Alnus glutinosa* at Marton Pool, Chirbury and Crose Mere.

Although it occurs in broadly similar habitats, it is more of a river flood-plain plant than *B. cernua*, being frequent along the length of the Severn and recorded near the Clun, Teme, Tern and Perry. A good site to see it is Brown Moss, where it occurs in a range of habitats, sometimes with *B. cernua*. The variety with unlobed leaves (var. *integra* W.D.J. Koch) has been recorded by the Shropshire Union Canal at Hawksmoor (J.H. Clarke & A.H. Franks, 1995).



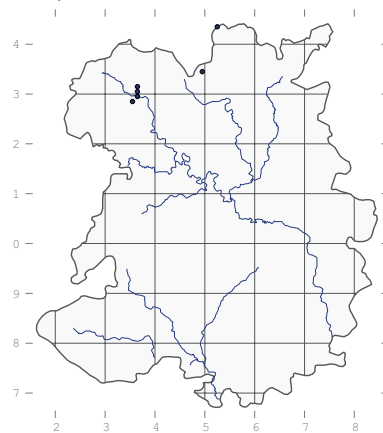
## *Bidens frondosa* L.

### Beggarticks

Neophyte. Scarce. Increasing. Canals.

First record: G.M. Kay, 1997, Llangollen Canal at Grindley Brook, SJ522431.

An alien from America that was first recorded in the wild in Britain by a canal in Birmingham in the 1950s. It has since spread throughout much of the canal network and it also occurs on waste ground. In 1997 it turned up on the Llangollen and Montgomery Canals, and it has since been found on the Prees Branch Canal (S. Burton, 2000).



## *Bidens ferulifolia* (Jacq.)

Sweet

### Fern-leaved Beggarticks

Neophyte. Rare.

One plant on the pavement outside Harry Tuffins in Craven Arms in 2010 (SO432828, Whild, BIRM).

## *Eupatorium cannabinum* L.

### Hemp-agrimony

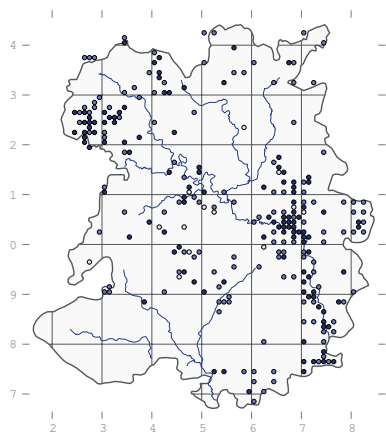
Native. Local. Stable. Fens, riverbanks and open woodland.

First record: Williams, c. 1800, 'ditches in a boggy soil, common.'

A perennial herb of tall, ungrazed fens. It is found in MG8 *Caltha palustris* at Crose Mere; M10 *Carex dioica* at Shirlett Gutter (Trueman, 1980); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979) and Sweeny Fen; S26 *Phragmites australis* in the old Shrewsbury Canal at Wappenshall; W5 *Alnus glutinosa* at Crose Mere (Wigginton, 1979); W6 *Salix × fragilis* at Fenemere; and wet W8 *Fraxinus excelsior* woodland at the Bog, Wilderhope and Whitwell Coppice.

It is a lowland plant, growing up to about 185 m at Wilderhope and Shirlett. A good place to look for it is in Ironbridge Gorge, along the river bank.





## Adoxaceae

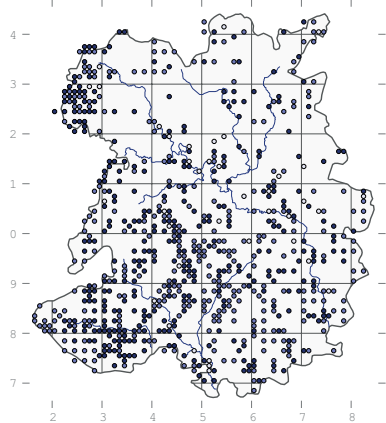
### *Adoxa moschatellina* L.

#### Moschatel

Native. Widespread. Stable. Axiophyte: woods and hedges.

First record: Williams, ca. 1800, 'moist woods and shady ditch banks.'

Typical of ancient woods but also capable of colonising or persisting in hedges and scrub. It is often found close to rivers, where it is found in W6d *Sambucus nigra* woodland in light shade, in places like Shelton Rough and by the Worfe at Beckbury. Elsewhere it occurs in W8 *Fraxinus excelsior* woods and analogous hedges and scrub throughout, and W9 *Sorbus aucuparia* in Betchcott Hollow. It is often found near to streams and ditches or in slightly damp hollows. A good place to see it is on the west side of Maddox's Coppice, where there are many thousands of plants.



## Caprifoliaceae

### *Sambucus racemosa* L.

#### Red-berried Elder

Neophyte. Rare. Planted. Shrubberies and gardens.

A widely planted shrub, naturalised in Scotland and northern England. There are a couple of records of it in

Shropshire, at Hungryhatton (R.B. Lees, 1978) and Coalbrookdale (J.D. Box, 1993), but no suggestion that it is established in the wild.

### *Sambucus nigra* L.

#### Elder

Native. Widespread. Stable or increasing. Riverbanks, hedges, woods, scrub.

First record: Williams, c. 1800, 'hedges, common.'

Frequent in places with soil disturbance, such as around rabbit warrens and badger setts, in overgrazed hedgebanks and on river floodplains. In the last situation it forms a distinctive open woodland type, W6d *Sambucus nigra*, which is found in places like the River Worfe at Beckbury and Shelton Rough. It is sometimes very rich in epiphytic bryophytes.

It is also frequent in most other types of woodland, including W5 A. *glutinosa* at Oss Mere, Sweat Mere (Packham, 1970) and White Mere (M.J. Wigginton, 1979); W6 *Salix* × *fragilis* at Redhill Coppice, the Alders, Wollaston and elsewhere; W7 *Lysimachia nemorum* at Fastings Coppice; W8 *Fraxinus excelsior* and W10 *Quercus robur* in many places; and W21 *Crataegus monogyna* scrub in places like the old Shrewsbury Canal at Uffington. At Betton Pool it was recorded in OV26 *Epilobium hirsutum* tall herb by Wigginton in 1979.

A white-fruited variety was recorded by Williams adjoining Cound Parsonage in about 1800. The cut-leaved garden variety sometimes called var. *laciniata* was found by E. Heywood-Waddington in a field hedge near Neen Savage in 1978. It is not limited by altitude, growing near the summits of all the higher hills.



### *Sambucus ebulus* L.

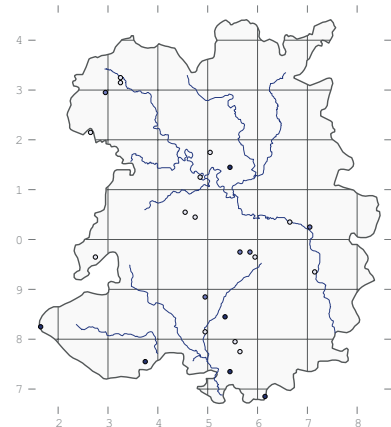
#### Dwarf Elder

Archaeophyte. Scarce. Stable. Road verges, field margins, woodland edge.

First record: R.H. Waring, 1770, Fernhill and Whittington Castle.

There are six current sites for it: on the side of a green lane at Adley Moor, where it was first recorded by Williams in c. 1800 and was recently re-found by J. Clayfield in 1991; in MG1 *Arrhenatherum elatius* grassland on a roadside verge at Peaton, where it was also first recorded by Williams and was re-found by M.B. Fuller in 1989; by the ruined mill at Vron (Clayfield, 2009), where it grows on a wooded riverbank and in MG1 on the edge of a field of pasture; by the A456 at Burford (R.M. Stokes, 2003); at Caynham (A. Ashwell, 1991); and along the edge of a track on Houghmond Hill (D.H. Wrench, 2011).

Some of the early sites are clearly associated with gardens, such as Whittington Castle and Albright Hussey (Williams, c. 1800), but others suggest that it was more of a weed or a casual. Leighton (1941) found a field of several acres near Middlehope that was entirely covered in it, but by 1929 it was restricted to the roadside verge as a result of tree planting (G. Potts), and it has not been seen there since 1955 (E.M. Rutter). Lowland: up to 293 m at Walkmill, Vron.



### *Viburnum opulus* L.

#### Guelder-rose

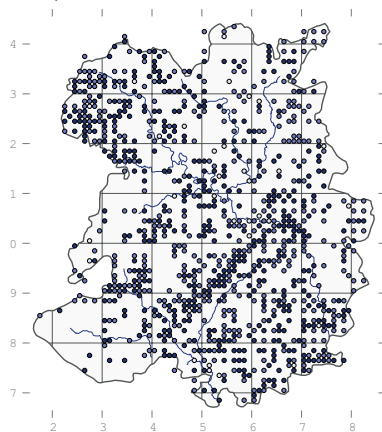
Native. Widespread. Increasing. Woods, hedges and limestone grassland.

First record: Williams, c. 1800, 'moist hedges, common.'

A shrub of woods and hedges on base-rich to neutral soils, usually in wet situations but sometimes in dry limestone grassland, often in abandoned quarries. In the latter habitat it is recorded in places like

Pattens Rock Quarry on Benthall Edge (first recorded there by G. Potts in 1932), in Butcher's Quarry on Llyncllys Hill (M.E. Roberts, 1989) and in all the quarries on Wenlock Edge.

In most of these places it is in CG2 *Avenula pubescens* grassland or in woodland edge habitats. Most records of it are from woodlands, including W5 *Alnus glutinosa* at Cole Mere and Morton Pool; W6 *Salix* × *fragilis* at Blake Mere and Cole Mere; W7 *Lysimachia nemorum* at Limekiln Wood (Trueman, 1981); W8 *Fraxinus excelsior* in many places; and W10 *Quercus robur* on Haughmond Hill. At Fenemere it grows in S24 *Calamagrostis canescens* fen. It has the ability to colonise new sites, presumably from bird-sown seed, and it is increasingly being planted in new woods and hedges. In Shrewsbury it now turns up on walls along the towpath of the Severn. Overall, it seems to be increasing slightly, particularly away from its core limestone areas. Lowland: up to 350 m at Brook Vessons and maybe slightly higher at The Knolls (J.A. Warren, 1980).



### *Viburnum lantana* L.

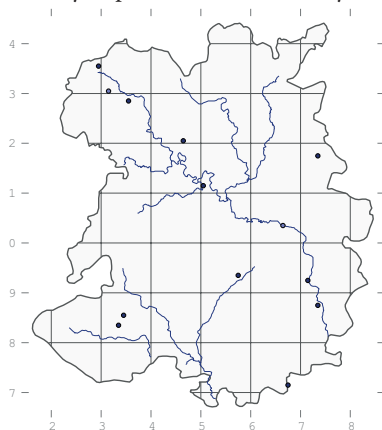
#### Wayfaring-tree

Native. Scattered. Increasing. Hedges.

First record: E.D. Pugh, c. 1980, Whittington.

Becoming quite widespread as a planted shrub in hedges, but clearly not occurring naturally in the county. The early records seem rather dubious: F. Westcott (1843) listed it for Ludlow, but did not record *V. opulus*, and T. Diamond (1891) reported two localities in the Oswestry area but did not name the recorder. Whilst recording for Sinker's Flora in the 1970s or 1980s E.D. Pugh recorded it along Whittington Road, east of Oswestry (SJ3130). This did not make it into the published work, but it seems likely to have been correct.

Since then it has been recorded as planted in the Rea Brook Valley park in Shrewsbury (M. Thornton, 1997), by the Montgomery Canal at Keeper's Bridge, at Chelmarsh Reservoir (A.K. Thorne, 2000), at Merrington Green and in hedges in several other places. At Bridgnorth it is naturalised on scrubby slopes near the cliff railway.



### *Viburnum tinus* L.

#### Laurustinus

Neophyte. Rare.

A garden shrub, rarely found in the wild, but recorded as planted by the Newport Canal in Newport (R.M. Stokes, 2003) and on pitmounds in Ketley (P.S. Gateley, 2003).

### *Viburnum rhytidophyllum*

Hemsley ex Forbes & Hemsley

#### Wrinkled Viburnum

Neophyte. Rare.

A garden shrub, well established in old gardens at Cound Lake (Whild, 1997) and along the old railway line at Granville Country Park (A.K. Thorne, 2000).

### *Symphoricarpos albus* (L.)

S.F. Blake

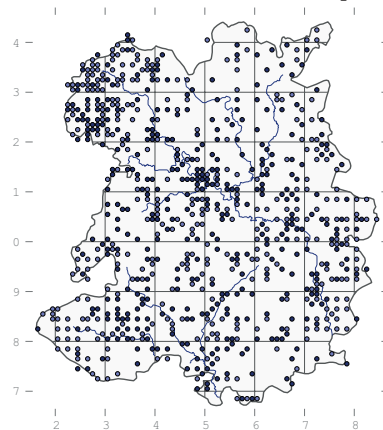
#### Snowberry

Neophyte. Widespread. Stable. Gardens, roadsides, woods and waste ground.

First record (as *S. racemosus*): J.C. Melvill, 1916, 'becoming naturalised in one or two spots.'

Frequent in gardens and ornamental plantings, and formerly sometimes introduced in woods as game cover. It is now widespread on roadsides, where it slowly spreads to form thickets. It mostly spreads vegetatively, so it tends to turn up only where it has been deliberately planted or dumped, but there is also some evidence of it spreading along rivers. By the Severn

in Shrewsbury it grows in MG1c *Filipendula ulmaria* grassland where there is no sign of it having been planted. Melvill (*Record of Bare Facts* 26, 1927) described it as becoming naturalised in Botanical Division IV, which includes Meole Brace, where it was also recorded by A.E. White in 1923 on a roadside. It may be a bit more common than in Sinker's Flora, but it is not always systematically recorded because it is usually fairly obviously planted. Lowland: up to about 250 m at Cwm Cold and Hope.



### *Symphoricarpos* × *chenaultii* Rehder (*microphyllum* × *orbiculatus*)

#### Chenault's Coralberry

In a disused railway yard at Woofferton (M.M. Webster, 1975, conf. P. Harrold, E), and a large clump by the A53 at Shifford Bridge, Market Drayton (R.M. Stokes, 2003, conf. Whild, BIRM).

### *Leycesteria formosa* Wallich.

#### Himalayan Honeysuckle

Neophyte. Scattered. Increasing. Gardens, waste ground, roadsides.

First record: Whild, 2005, 'on pavements in West Street, Shrewsbury.'

In recent years this garden plant has begun to spring up in many places, usually as a result of bird-sown seeds from plants in nearby gardens. It is typical of pavement edges at the base of walls, where it can become established in small cracks, and the growing plants can prise apart bricks and slabs. At Woodhill a sizeable plant was found growing out of a wall. A good place to see it is along the Severn in Shrewsbury, where it sometimes appears on the towpath.

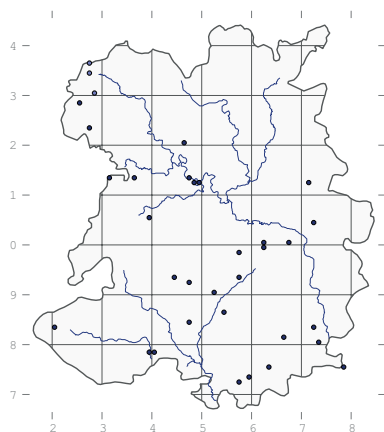


***Lonicera nitida* E.H. Wilson**  
**Wilson's Honeysuckle**

Neophyte. Scattered. Increasing.  
 Woods, roadsides and walls.

First record: M.E. Roberts, 1979, 'in a field hedge at Wern, Weston Rhyn.'

An evergreen shrub, often planted in woods and hedges. There are apparently two clones in cultivation, one of which hardly ever flowers, and this is the plant most often used for hedging or cover in woods. The flowering one is less common but is planted in shrubberies and gardens; there is a fine self-sown plant on a wall in Victoria Avenue in Shrewsbury (Whild, Godfrey & Lockton, 2011). A good place to see it is at the Novers, where it was first recorded by Perring in 1993, and where there is now a large stand at the entrance to Knowle Wood Nature Reserve.



***Lonicera involucrata***  
 (Richardson) Banks ex Spreng.  
**Californian Honeysuckle**

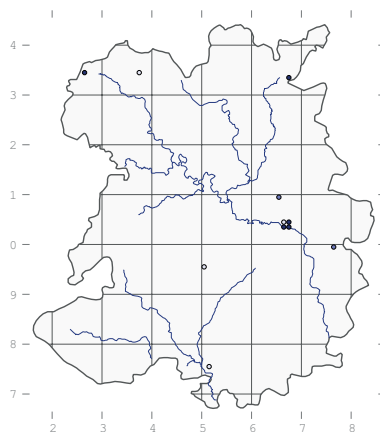
Established for a length of about 4 m along a lane in Broseley (SJ676025, W.A. Thompson, 1982, det. E.J. Clement).

***Lonicera xylosteum* L.**  
**Fly Honeysuckle**

Neophyte. Scarce. Stable. Gardens and hedges.

First record: W.P. Brookes, 1834 (conf. Leighton), 'Coalbrookdale Walks.'

Long established in Coalbrookdale, where it grows in hedges near Dale Coppice and at nearby Limekiln Wood (S.R. Turner, 1963) and Lincoln Hill (A.K. Thorne, 2005). It is also recorded in a few scattered localities such as Badger Dingle (B.R. Fowler, 1982) and Selattyn (M.E. Roberts, 1978). There has been speculation that it could be native in the south of England, but that is not currently thought to be likely.



***Lonicera japonica* Thunb. ex Murray**  
**Japanese Honeysuckle**

Naturalised in a hedge in Wombridge (R.M. Stokes, 1997, BIRM).

***Lonicera periclymenum* L.**  
**Honeysuckle**

Native. Widespread. Stable. Woods, hedges, old walls and ungrazed grassland.

First record: Williams, c. 1800, 'hedges, common.'



Scrambling over the ground in dense shade, climbing up trees or spreading into open habitats such as grassland in old abandoned quarries.

It is recorded in a wide variety of woodland types, including W4 *Betula pubescens* woods on Haughmond Hill, Sweat Mere (Trueman, 1981) and Bomere Pool; W4c *Sphagnum fallax* at Lin Can Moss; W5 *A. glutinosa* woods at Blake Mere, Cole Mere, Shomere Pool and Sweat Mere; W6 *Salix × fragilis* woods at Brown Moss, Cole Mere and White Mere; W7 *Lysimachia nemorum* in places like Birchen Park, Brook Vessons and Limekiln Wood (Trueman, 1981); in all W8 *Fraxinus excelsior* woods; W9 *Sorbus aucuparia* at Betchcott Hollow; in all W10 *Quercus robur* woods; W16 *Q. petraea* at Sowdley

Wood and elsewhere; W17 *Leucobryum glaucum* at Oaks Wood; and W23 *Rubus fruticosus* at Old Oswestry. At Bomere Pool it occurs in S27 *Comarum palustre* fen (M.J. Wigginton, 1979). Where there is little grazing, it often colonises grassland and quarry waste in places like Dolgoch Quarry and Pattens Rock Quarry. It is not restricted by altitude, but it is absent from the summits of the highest hills owing to a lack of suitable habitat.

***Lonicera caprifolium* L.**  
**Perfoliate Honeysuckle**

Neophyte. Rare. Stable. Waste ground.

First record: H. Spare, 1841, 'Whitecliff Coppice, Ludlow.'

Occasionally grown in gardens and sometimes established in the wild. The only current site is at Llanymynech Rocks, just inside the Shropshire border, on an old spoil heap, where it was first found by E.D. Pugh in 1977. Previously it has been reported from Belle Vue (R.D. Benson, 1893), Pontesbury (H.F. Pendlebury, 1940), Ryton (R.M. Serjeantson, 1909), Sharpstones Hill (J.C. Melvill, 1909), The Albynes (F. Pitt, 1912) and Whiston Cross (Serjeantson, 1909). In some of these places it was clearly a garden plant, but in others it seems to have become naturalised for a short while.



*Hedera helix* flower



*Hydrocotyle vulgaris* at Lin Can Moss



## Valerianaceae

*Valerianella locusta* (L.)

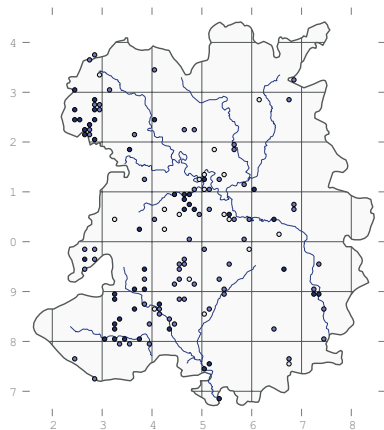
Laterr.

## Common Cornsalad

Native. Scattered. Stable. Hedgebanks, roadsides, waste ground.

First record: Williams, c. 1800, 'common.'

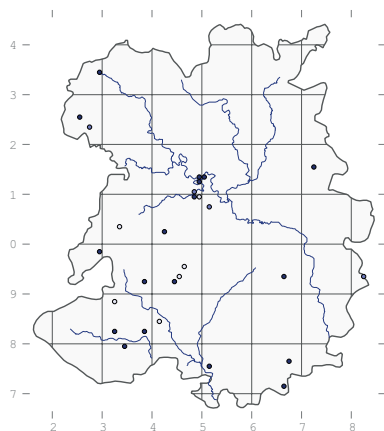
Occasional on bare ground, often in and around towns. Babington (in Plymley 1803) described it as 'a common plant on banks near the hedges [in Ludlow]. Some persons use it commonly in salad, and they say it is nearly as good as young lettuce.' It has been recorded recently on hedgebanks at Cound and Bayston Hill (K.K. Bell, 2011), on a pavement in Hanwood (D.H. Wrench, 2006). A good place to see it is on hedge banks along the lanes in Nantmawr.

*Valerianella carinata* Lois.

## Keeled-fruited Cornsalad

Archaeophyte. Scattered. Increasing. Roadsides, walls, gardens.

First records: J.E. Bowman, 1841, 'hedge-banks under the quarries near Leigh Hall,' and Leighton, 1841, 'hedge-bank close to Long Lane Quarry.'



A garden weed, often escaping onto disturbed habitats nearby, but not becoming established in semi-natural situations. There are recent records of it spreading from gardens at Ron Hill,

Cleobury Mortimer and on the wall of a pub car park at Neens Hill (both P.R. Green, 2010), on the cemetery wall at Lilleshall Hill (S. O'Donnell, 2010), on the towpath wall in Shrewsbury and on the verge of Cunners Road, Church Stretton (both R.J. Swindells, 2011).

*Valerianella dentata* (L.)

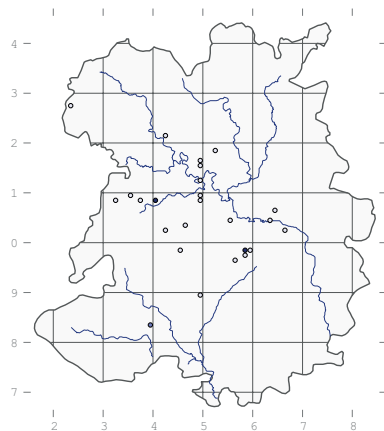
Pollich

## Narrow-fruited Cornsalad

Archaeophyte. Rare. Casual. Arable fields, waste ground, roadsides.

First record: Leighton, 1835, 'hedge-banks near Cross Hill' (CGE).

Formerly widespread on field margins and other patches of bare ground, but now very rare. There are recent records for a sandy beet field at Hinton in 1991 (A.K. Thorne) and the edge of a quarry on Wenlock Edge (D.L. Buckingham, 2000) but otherwise it has not been seen since 1927 (at Hopesay, by H.S.T. Richardson).

*Valerianella eriocarpa* Desv.

## Hairy-fruited Cornsalad

Neophyte. Rare. Casual. Waste ground.

Just three records: in a corn field near Sharpstones Hill (Leighton, 1837), at Benthall (W.B. Allen, 1904), and at Meole Brace (J.C. Melvill, 1922). The last two sites were probably gardens.

*Valeriana officinalis* L.

## Valerian

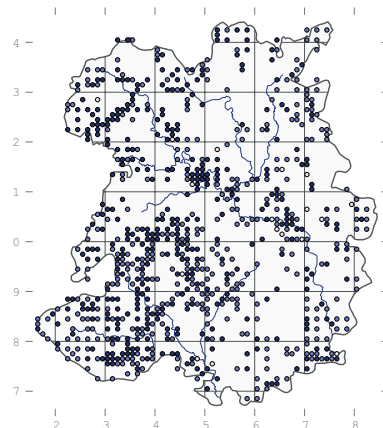
Native. Widespread. Stable. River sides, canals, wet woods.

First record: Williams, c. 1800, 'common.'

In a variety of wetland habitats including wet grassland, river floodplains and canal sides; and sometimes by contrast in dry calcareous grassland, as at Pattens Rock Quarry on Benthall Edge. It sometimes occurs in damp mesotrophic grassland such as MG10 *Holcus lanatus* in places like Hope Coppice, but it is

more common in base-rich situations such as M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979) and Sweeny Fen (Packham, 1979). It is most common along rivers, and a typical site for it is the Old River Bed in Shrewsbury, where it grows in OV26 *Epilobium hirsutum*, S7 *Carex acutiformis* swamp and S10 *Equisetum fluviatile*. At Fenemere it is found in S24 *Calamagrostis canescens* fen and at Marton Pool, Chirbury, it occurs in S26 *Phragmites australis* fen.

It is frequent in alder woods such as W5 *Alnus glutinosa* at Cole Mere and Sweat Mere; W6 *Salix* × *fragilis* by the Severn at Shelton Rough and along rivers throughout the county; and W7 *Lysimachia nemorum* in Betchcott Hollow and Limekiln Wood. By the Habberley Brook at Earl's Hill it grows in W8 *Fraxinus excelsior* in the absence of any distinct riparian habitat. A curious situation for it is as an epiphyte on tussocks of *Carex paniculata* in W5 woodland by the Bailey Brook at Millenheath.

*Valeriana pyrenaica* L.

## Pyrenean Valerian

Neophyte. Rare. Casual. Gardens.

First record: W. Beacall, 1904, 'reservoir, Carding Mill Dingle.'

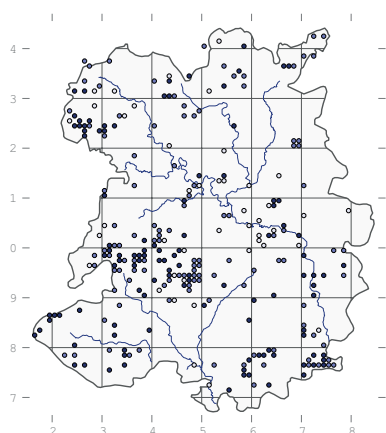
A garden plant, sometimes established in semi-wild situations. It has been recorded in the Rea Brook Valley in Shrewsbury (J.C. Melvill, 1909), at Benthall Hall (P. Benthall, 1970), in Old Rectory Wood (H.M. Davidson, 1972-1977), at Selattyn (M.E. Roberts, 1978) and at Acton Scott Farm (D.H. Wrench, 2004). Some of the recorders considered it to have been naturalised and spreading, but this has turned out not to be the case.

***Valeriana dioica* L.****Marsh Valerian**

Native. Local. Decreasing. Axiphyte: flushes, bogs, wet woodland.

First record: Williams, c.1800, 'common.'

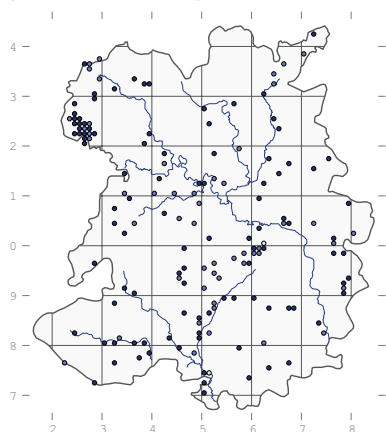
In M10 *Carex dioica* at Shirlett Gutter (Trueman, 1981) and Trefonen Marshes, where it also extends into M13 *Palustriella commutata*; M22 *Juncus subnodulosus* at Black Coppice, Morton Pool (D.H. Wrench, 1991), Sweeny Fen, Trefonen Marshes and Crose Mere; and M23 *Juncus effusus* on the Long Mynd (R. Tapper, 1983). In woodlands it has been recorded in W7 *Lysimachia nemorum* in Limekiln Wood (Trueman 1981), W8 *Fraxinus excelsior* at The Bog, Wilderhope, and W10 *Quercus robur* on Haughmond Hill. A good place to see it is on Wem Moss, where it is abundant in the wooded lagg.

***Centranthus ruber* (L.) DC.****Red Valerian**

Neophyte. Scattered. Increasing. Walls, rock faces in quarries, old concrete.

First records: J.S. Baly, 'walls of Ludlow Castle'; and Leighton, 'Wenlock Abbey' (both in Leighton 1841).

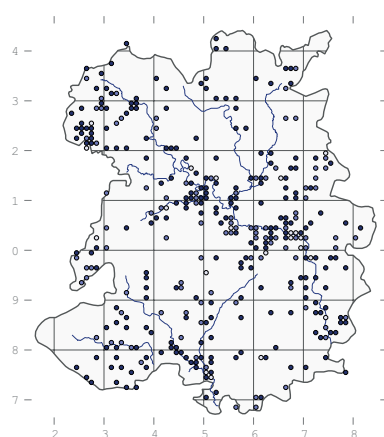
Occasional as a garden escape on walls and rock faces. Good places to see it include Llynclys Quarry, where it was first recorded by E.M. Rutter in 1961, and walls in Ludlow, where it still grows (R. Shoubridge, 2005).

**Dipsacaceae*****Dipsacus fullonum* L.****Wild Teasel**

Native. Local. Stable. Riversides, gardens and waste ground.

First record: Williams, c. 1800, 'hedges, common.'

Frequent along the main rivers, although not usually close to the water but on raised banks a short distance away. By the Severn at Monkmoor it grows in OV23 *Dactylis glomerata* on the embankment by the A49, while in Loamhole Dingle it grows on disturbed ground in W6 *Salix × fragilis* woodland since the river was reprofiled. It is also common on roadsides, building sites and waste ground in places like quarries and along railway lines. A good place to see it is by the Tern at Attingham Park, where it was first recorded by Beckwith in 1880. Lowland: mostly confined to the river valleys.

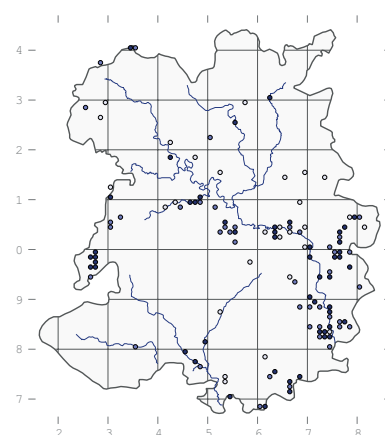
***Dipsacus pilosus* L.****Small Teasel**

Native. Local. Increasing. Axiphyte: rivers, wet woodland.

First record: W. Withering, 1787, Lilleshall Abbey.

Almost exclusively a plant of lowland riversides, often found growing at the top of the bank in lush of OV26 *Epilobium hirsutum* vegetation, often with dense stands of nettles. It is sometimes found by ditches, on damp slopes in woods or even on disturbed roadsides close to rivers, exclusively in the lowlands, no higher than about 110 m (at Marrington Dingle). Its habitats include open conditions in full sunlight, but it is more often found in partial shade and occasionally in the dense shade of plantations such as at The Bog, Harcourt, a former sedge swamp alongside the River Roden that

was planted up with hybrid poplars in the 1950s, and is now a shady W6 *Salix × fragilis* woodland with a dense ground flora of *Urtica dioica*. By the Borle Brook at New England it is exceptionally abundant in open W8 *Fraxinus excelsior* woodland where trees have been thinned. Sinker (1985) considered it to be restricted to the lower Severn valley, but it has now been recorded along the entire length of the Severn (in Shropshire) and in the valleys of all the other major rivers, including those of the north Shropshire plain. It is a biennial which germinates in the spring after winter flooding has left bare, nutrient-rich mud for seedling recruitment. The apparent increase could be due to lower grazing pressure, as rivers are now often fenced off or surrounded by arable land. It is not always reliably present, but good places to see it include Marrington Dingle, where it was first recorded by A.R. Horwood in 1901, and by the Rea Brook between Meole Brace and Hook-a-gate, where it has been seen many times since W.E. Beckwith found it there in 1882.

***Knautia arvensis* (L.) Coulter****Field Scabious**

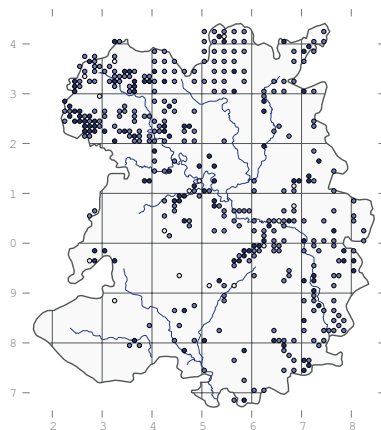
Native. Widespread. Declining. Grassland on roadsides, railways and quarries.

First record: Williams, c. 1800, 'meadows, pastures and cornfields, common.'

In calcareous grassland such as CG2 *Avenula pubescens* on a steep roadside verge at Pant (Trueman, 1981); CG3 *Bromopsis erecta* in Hilltop Meadow and Lea Quarry; the base-rich MG1e variety of *Arrhenatherum elatius* on Windmill Hill; and MG5 *Festuca rubra* at Nantmawr (Trueman, 1981) and in Wenlock Edge car park. Although it is still quite widely distributed throughout the county, it is becoming increasingly restricted to small numbers of plants on roadsides. The

## Vascular plants

best place to see it is on Windmill Hill, where it grows with the superficially similar *Centaurea scabiosa*.



### *Succisa pratensis* Moench Devil's-bit Scabious

Native. Local. Declining. Axiphyte: grassland and fen.

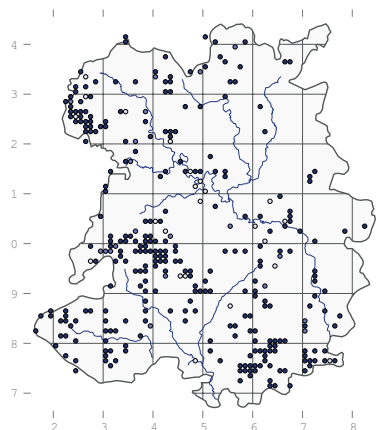
First record: Williams, c. 1800, 'moist meadows, common.'

An indicator of unimproved grassland, ranging from strongly calcareous to mildly acidic. It occurs in CG2 *Avenula pubescens* at Craig Sychtyn and CG10 *Helianthemum nummularia* on Llyncllys Hill, but its main habitat is MG5c *Danthonia decumbens* in places like Hayton's Bent (D.H. Wrench, 1995), Llanhowell (Trueman, 1981) and Ruewood. In the latter site it persists in drier MG6 *Cynosurus cristatus* grassland; at Morton Pool it grows in MG8 *Caltha palustris* grassland; and at Cole Mere it occurs in MG9 *Deschampsia cespitosa* grassland.

In mires it has been recorded in M10 *Carex dioica* at Shirlett Gutter (Trueman, 1981) and Trefonen Marshes; M13 *Palustriella commutata* at Trefonen Marshes; M15

*Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Black Coppice, Sweeny Fen and Crose Mere (Trueman, 1981); M23 *Juncus effusus* at Cole Mere (Wigginton, 1979), Stapeley Hill (Trueman, 1981) and on the Stiperstones; M24 *Cirsium dissectum* at Black Coppice and Cole Mere; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); and M27 *Filipendula ulmaria* at Lower Netchwood (Trueman, 1981).

It is much rarer in woodland, being recorded only in W7 *Lysimachia nemorum* at Brook Vessons. A good place to see it is at Ruewood Pastures, where it can be instructive to compare the distinctive leaves with those of *Centaurea nigra*. It is not limited by altitude, being found high on the Stiperstones, Long Mynd and Cleve Hills in suitable habitat.

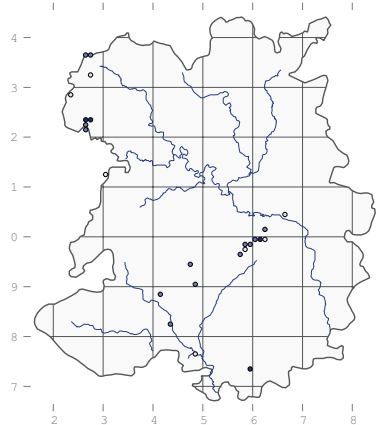


### *Scabiosa columbaria* L. Small Scabious

Native. Rare. Decreasing. Axiphyte: calcareous grassland.

First record: Williams, c. 1800, 'by the side of the turnpike road near Presthope.'

Very rare, in only the most base-rich unimproved grasslands. There are recent records of it in Blakeway Hollow (R.M. Stokes, 1996), by Jacob's Ladder on Llyncllys Hill (1998), in Blackbridge Quarry (A.K. Thorne, 2006), and at the Novers (N. Button, 2006).



## Araliaceae

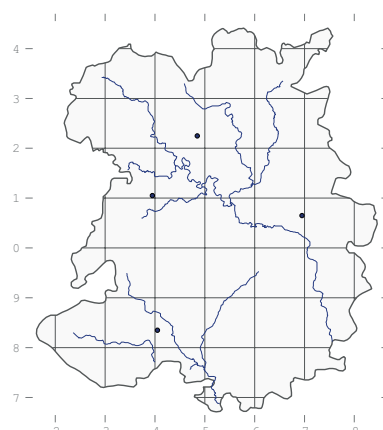
### *Hedera colchica* (K. Koch) K. Koch

#### Persian Ivy

Neophyte. Rare. Increasing. Churchyards, gardens, woodland edge.

First record: J.A. Thompson, 2000, Stirchley Church.

Occasional in plantings, sometimes spreading into woodland edges, as at Oldfield Wood (P.R. Green, 2009).



### *Hedera helix* L.

#### Ivy

Native. Widespread. Stable. Woods, hedges, scrub.

First record: Williams, c. 1800, 'old walls and trees, common.'

Ubiquitous at the bases of hedges, often sending its ascending, fertile shoots up the trunks of isolated hedgerow trees where it flowers in full sunlight. Although it can tolerate dense shade it does not thrive, so in mature woodland it is a rare plant unless there has been some disturbance to the canopy such as elm disease or thinning. It is also palatable to deer and livestock, so it is less abundant in grazed woods.

It is recorded in most woodland types, including W5 *Alnus glutinosa* at Brownheath Moss and Cole Mere; W6 *Salix × fragilis* at Betton Pool, Blake Mere, Loamhole Dingle, White Mere and (in W6d) alongside the Severn opposite Shrewsbury Castle; W7 *Lysimachia nemorum* in Limekiln Wood (Trueman, 1981); in almost all stands of W8 *Fraxinus excelsior*; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Cole Mere, the Ercall, Haughmond Abbey Wood and Muxton Bridge (Trueman, 1981); and W16 *Quercus petraea* at Oaks Wood. It is particularly common in scrub such as a W21 *Crataegus monogyna* hedgebank by the Shrewsbury Canal



*Astrantia major* in Stoke Wood



at Uffington and W24 *Rubus fruticosus* hedges and scrub at Chatwall, High Rock (Trueman, 1981) and Nobold. Often it grows in neglected grassland in old quarries such as Blackbridge Quarry and Craig Sychtyn, where it occurs in CG2 *Avenula pubescens* grassland over limestone.

Two subspecies occur in Shropshire, ssp. *helix*, which is common throughout, and ssp. *hibernica* (Kirchner) D. McClint., which is rarer and possibly restricted to the west, but is not well recorded. One of the commonly grown garden varieties, *Hedera* 'Hibernica', Irish Ivy, is often grown in municipal plantings and sometimes escapes into woodland fringes. It is absent from the higher hills, largely because of grazing, as it is found up to about 350 m at Resting Hill, where the woodland is fenced.



### *Aralia racemosa* L.

#### American-spikenard

Described by Sinker (1985) as well naturalised in Badger Dingle, which was for a while considered the only such population in Britain (Stace 1997), but a few other records have been made since then.

## Hydrocotylaceae

### *Hydrocotyle vulgaris* L.

#### Marsh Pennywort

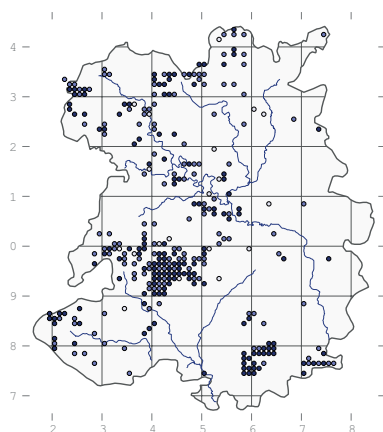
Native. Local. Declining. Axiophyte: swamp, fen, upland flushes and wet woodland.

First record: Williams, c. 1800, 'sides of pools and boggy ground, common.'

In damp grassland, including MG5 *Festuca rubra* along stream sides in Townbrook Hollow and MG8 *Caltha palustris* at Crose Mere. In mires, it is found in M4 *Carex rostrata* around the edges of a dystrophic pool at Clarepool Moss; M6 *Carex echinata* at Colliersford Gutter (R. Tapper, 1983); M10 *Carex dioica* and M13 *Palustriella*

*commutata* at Trefonen Marshes; M22 *Juncus subnodulosus* at Crose Mere, Morton Pool (D.H. Wrench 1991) and Trefonen (M.J. Wigginton, 1979); M23 *J. effusus* in places like Bomere Pool, Ebnal Pool (Trueman, 1981), Gogbatch and Snipe Bog; and it is recorded in M24 *Cirsium dissectum* at Black Coppice; M25 *Molinia caerulea* at Steel Heath; M29 *Potamogeton polygonifolius* on Wild Moor (Tapper, 1983); and M35 *Montia fontana* at Boiling Well (Trueman, 1980) and Lightspout Hollow (Tapper, 1983).

At Berrington Pool it extends into OV26c *Filipendula ulmaria* swamp (Wigginton, 1979), and at Brown Moss it grows in OV31 *Rorippa vulgaris* and OV35 *Lythrum portula* on the edges of pools. In swamp communities it is recorded in S9 *Carex rostrata* at Berrington Pool (Wigginton, 1979); S12 *Typha latifolia* at Brown Moss, Snipe Bog and Shelve Pool (Trueman, 1981); and S27 *Comarum palustre* in many places. Often it persists in woodland, specifically in W1 *Salix cinerea* at Snipe Bog; W4 *Betula pubescens* in many places; W5 *Alnus glutinosa* at Fenemere (Wigginton, 1979); W6 *Salix × fragilis* at Brown Moss; and even once in W10 *Quercus robur* at Shrawardine Pool.



### *Hydrocotyle ranunculoides* L.f.

#### Floating Pennywort

Neophyte. Rare.

In a pond by the A5 Oswestry bypass, SJ307294 (B.J. Laney, 2008).

## Apiaceae

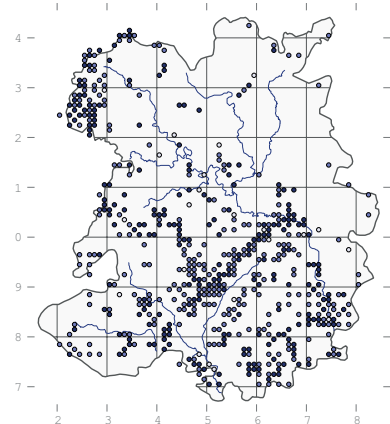
### *Sanicula europaea* L.

#### Sanicle

Native. Local. Stable. Axiophyte: calcareous woods.

First record: Williams, c. 1800, 'woods, common.'

Although it is quite a widespread plant, Sanicle is largely confined to W8 *Fraxinus excelsior* woods, which is the typical climax community on the more calcareous soils throughout the county. It is most common on woodland edges and along rides in half shade, and sometimes it spreads into the open, as at Pattens Rock Quarry on Benthall Edge. It can also be found in fragments of relict woodland alongside rivers and even on hedgebanks. It is rarely abundant, and usually occurs in small, isolated patches. Good places to see it include all the well-known limestone woods such as Benthall Edge, Wenlock Edge and Llynclys Hill. Lowland, up to about 260 m at Blakeway Coppice (Trueman, 1981).



### *Astrantia major* L.

#### Astrantia

Possibly native. Rare. Stable. Axiophyte: woodland.

First record: A. Aikin, 1825, 'in an apparently wild state in a wood which covers the N.E. side of Yeo-edge, a limestone hill near Stokesay Castle.'

When *Astrantia* was first found at Stoke Wood by Aikin in 1825 (*Transactions of the Linnean Society*, 1827, p. 507) it was hailed as the discovery of a new native species, but opinion turned and it is now usually described as a garden escape. However, plants from there turn out to be subsp. *major* (Sell 2009), which distinguishes it from the garden plant with its long bracteoles. It is still there in some abundance in W8 *Fraxinus excelsior* woodland (SO429809, 2010) and it occurs in the same habitat in

## Vascular plants

Beechfield Dingle, where it was first recorded by R. Harrison & L. Lloyd in 1954.

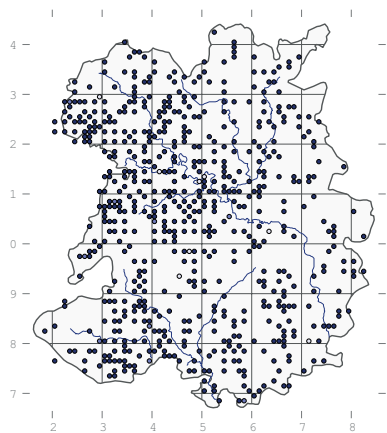
Elsewhere it is clearly a garden escape, and it has been recorded in the grounds of Clungunford Hall (J.M. Roper, 1978); in a garden in Pant (H. Webster, 1992); and on roadsides at Caynham (M.C. Daniel, 2001) and Ron Hill (P.R. Green, 2010), although no-one has checked the subspecies of those plants.

### *Chaerophyllum temulum* L. Rough Chervil

Native. Widespread. Stable. Roadsides and river banks.

First record: Williams, c. 1800, 'hedges, common.'

In woodland margins and hedge banks, typically in W8 *Fraxinus excelsior* woodland and scrub, as in a quarry at Stokes's Barn (Trueman, 1981) or around Betton Pool. It is also recorded in CG3 *Bromopsis erecta* at Ballstone Quarry and W24 *Rubus fruticosus* on a road verge at Abdon. It is common on roadsides and in hedges throughout the county.



### *Anthriscus sylvestris* (L.) Hoffm.

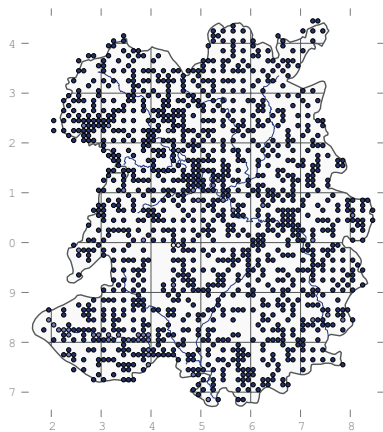
#### Cow Parsley

Native. Widespread. Stable. Hedges and woods.

First record: Williams, c. 1800, 'meadows and orchards, common.'

One of the most common plants of roadside verges and the edges of paths, where it is ubiquitous in MG1 *Arrhenatherum elatius* grassland and W24 *Rubus fruticosus* underscrub. It is also a constituent of MG5 *Festuca rubra* meadows (e.g. at Seifton Batch, D.H. Wrench, 1995) but it is very rare in more improved MG6 or MG7 grasslands. On river banks it grows in OV26 *Epilobium hirsutum* tall herb (e.g. at Longford). It is a

minor component of many woodland communities, being especially frequent along streams. It is most typical of calcareous W8 *Fraxinus excelsior* woodlands (Betton Dingle, Borle Brook at New England), but has been recorded in W10 *Quercus robur* woodland at Nant-y-myssels.



### *Anthriscus cerefolium* (L.) Hoffm.

#### Garden Chervil

Neophyte. Rare. Casual. Gardens.

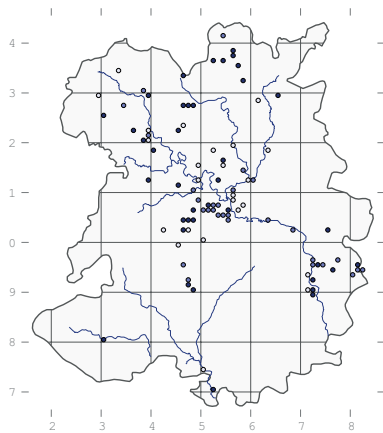
Sometimes recorded as established in the wild. Leighton (1841) gave records for a dung hill at Ludlow Castle (M. McGhie), Broseley Hill (F. Dickinson) and White Ladies (H. Bidwell); in the 1880s T. Butler recorded it on a railway crossing at Eaton Mascott; and in the early 20<sup>th</sup> century J.C. Melvill recorded it in his garden at Meole Brace (*Record of Bare Facts* 35, 1926).

### *Anthriscus caucalis* M. Bieb.

#### Bur Parsley

Native. Local. Stable. Axiophyte: roadside hedgebanks, sand quarries, railway embankments and arable fields.

First record (as *Scandix anthriscus*): Williams, c. 1800, 'dry ditch banks.'



Typical of dry, sandy banks with plenty of bare ground. It seems to have high site fidelity, with records for some areas spanning decades or even centuries. At

Boreton Bank it was first recorded by E.M. Rutter in 1954 and is still present (R.M. Stokes, 1997); similarly, there are records for Cardeston from 1977 (S. Stafford) till 2008 (B.J. Laney), for Cound from 1880 (W.E. Beckwith) till 1981 (P. Parker) and for The Cliffe from 1892 (Beckwith) till 1998 (J. Ing).

### *Scandix pecten-veneris* L. Shepherd's-needle

Archaeophyte. Rare. Last recorded in 1994. Arable fields.

First record: Williams, c. 1800, 'cornfields, common.'

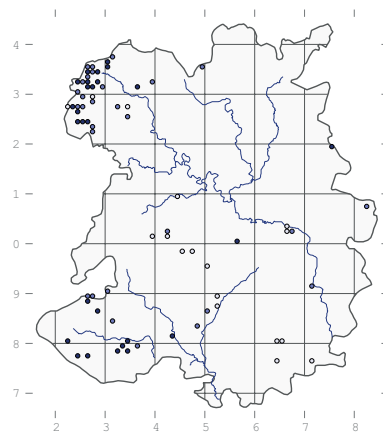
A formerly common arable weed that has completely disappeared from the countryside. The only record in the last 50 years or so is from Wentnor (S. Kingsbury, 1994) when it came up on soil from an old paddock that was incorporated into a garden.

### *Myrrhis odorata* (L.) Scop. Sweet Cicely

Neophyte. Local. Stable. Gardens and road verges.

First records: Williams, c. 1800, 'ditch around Stokesay Castle', in a field at Hopton Wafers, 'in the ruins of White Ladies Priory.'

A former garden herb, often found naturalised near ruins and old inhabited places, especially in limestone areas. It can be very persistent; for example, it still grows at Stokesay Castle (J.A. Thompson, 1995) and it was last recorded at White Ladies in 1962 by Meryl Shanklin. Its main habitat seems to be in MG1 *Arrhenatherum elatius* grassland, where it occupies a niche more typically taken by *Anthriscus sylvestris*. A good place to see it is by the Montgomery Canal at Frankton Locks, where it was first recorded by E.M. Rutter in 1954.



***Coriandrum sativum* L.****Coriander**

A crop volunteer at Whiston Farm in 2004; not naturalised.

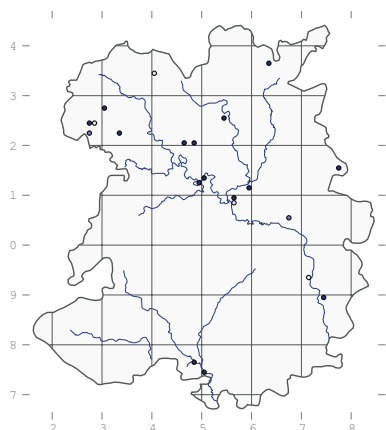
***Smyrniolus olusatrum* L.****Alexanders**

Archaeophyte. Scarce. Stable. Roadsides.

First record: R.H. Waring, 1770, Ludlow Castle.

The main habitat for Alexanders is a rather unusual one – ruined castles. Many people have recorded it at Ludlow Castle since Waring's day; and it was still there in 1994 (P. Parker). Williams first recorded it at Shrewsbury Castle in about 1800, and it is still present there, too, sometimes growing along the towpath of the Severn as far as St Mary's Water Lane. Williams also recorded it at Ellesmere Castle, but both the castle and the *Smyrniolus* have long since gone.

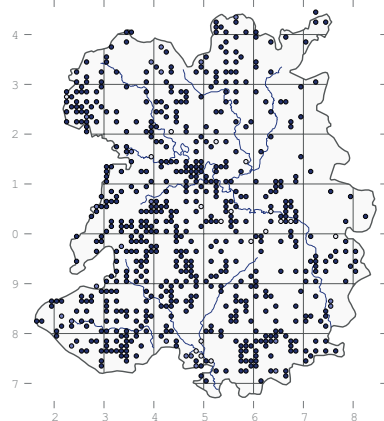
It sometimes also occurs as a garden escape, most notably at Llynclys, where it has been a persistent weed since the time of Diamond's Flora (1891); also at Merrington Green, where it has been on a roadside for at least 20 years. Most populations do not persist, however, and have been recorded only once. It usually occurs in grassland in full sunlight, but below Shrewsbury Castle it thrives in half shade under elms and cherries. It flowers early in the year, in April, and dies down by mid summer. It was formerly cultivated as a vegetable but is rarely grown in Britain now. Populations in Shrewsbury, Llynclys and Knockin were heavily infected by the yellow rust *Puccinia smyrnii* Biv.-Bernh. in the late 1990s (det. T.F. Preece) but less so recently.

***Conopodium majus* (Gouan)****Loret****Pignut**

Native. Widespread. Stable. Woodland and grassland.

First record (as *Bunium flexuosum*): Williams, c. 1800, 'meadows and pastures, common.'

In ancient woodlands and old pasture, usually on slightly acid soils. Very widespread in W8 *Fraxinus excelsior* woodland throughout the county and sometimes also in W10 *Quercus robur* woodland, as at Bushmoor Coppice. This is probably its main native habitat, but it persists in unimproved grassland such as MG1e *Centaurea nigra* on woodland edge at Shelton Rough; in MG5 *Festuca rubra* meadows at Knowbury (Trueman, 1981), Hayton's Bent, Hill Houses, Lubberland and The Thrift (all D.H. Wrench, 1995), Cole Mere and Ruewood; and MG6 *Cynosurus cristatus* grassland at Becks Field and Melverley Farm. At Sweeny Fen it occurs in M22 *Juncus subnodulosus* fen-meadow and on Westcott Hill it is recorded in U1 *Rumex acetosella* grassland (Trueman, 1981).

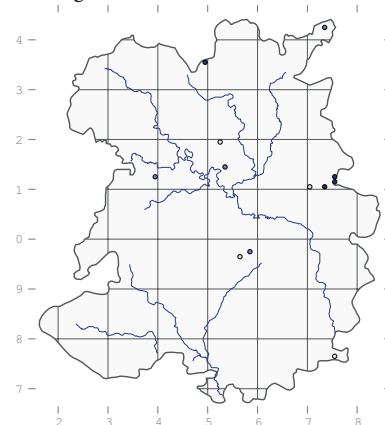
***Pimpinella major* (L.) Hudson****Greater Burnet-saxifrage**

Native. Rare. Stable. Roadsides.

First record: Williams, ca. 1800, Redhill.

Nearly all records are from roadsides and other transport routes, with no repeats, which suggests that it is a casual in unsuitable habitat. The only exception is in an area alongside Watling Street (the A5) at Redhill, east of Telford. Here it was recorded by Williams in about 1800 and W. Phillips in 1904, and it was still present in 2009 in MG1 *Arrhenatherum elatius* grassland on the side of a lane leading south from the main road. The only other recent site for it was in 1996, when P. Parker found a plant on the towpath of the Llangollen Canal at Whixall Moss.

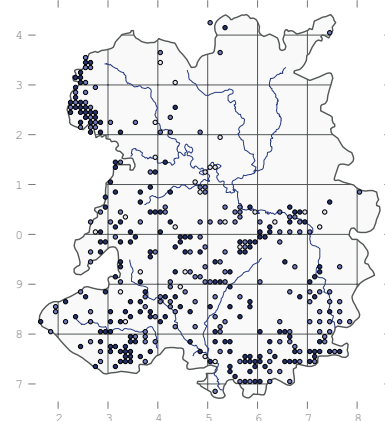
Over the years there has been a smattering of records, from Hadnall (E. Elsmere, 1841), Hill Top (Leighton, 1841), Ludlow Castle (M. McGhie, 1841), Wyre Forest (G. Jordan, 1856), Cardeston (G. Johnson, 1911), Presthope (G. Potts, 1925), Haughmond Hill and Woore (both A. Stirling, 1958).

***Pimpinella saxifraga* L.****Burnet-saxifrage**

Native. Local. Decreasing. Axiophyte: grassland.

First record: J.J. Dillenius, 1726, Norbury.

Occasional in unimproved base-rich grassland, notably CG2 *Avenula pubescens* at Blackbridge and Dolgoch quarries, Jones's Rough and the Novers (Trueman, 1981); CG3 *Bromopsis erecta* in Lea Quarry and Stretton Westwood (D.H. Wrench, 1995); and MG5 *Festuca rubra* grassland in many places, including Crickheath Hill (Trueman, 1979), Hayton's Bent (D.H. Wrench, 1995), Nantmawr (Trueman, 1981) and Windmill Hill. Sometimes it persists in open woodland, as in a patch of W8 *Fraxinus excelsior* scrub at Blodwel Rock (Trueman, 1981). It has been in decline for centuries as old grasslands are improved, but it is still present on roadsides and canal banks, so its range has hardly changed. A good place to look for it is on Llynclys Hill, where it has been recorded many times since 1960 (E.M. Rutter).





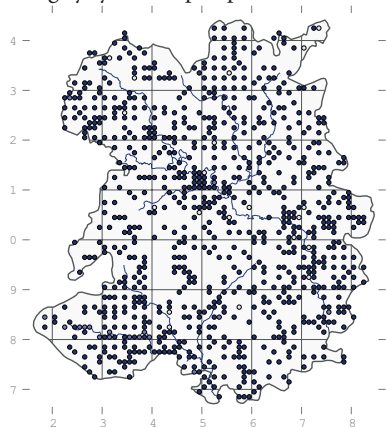
## *Aegopodium podagraria* L.

### Ground-elder

Archaeophyte. Widespread. Stable. Gardens, roadsides and river sides.

First records: Williams, c. 1800, 'in Madeley and Stirchley church-yards, by Cound Bridge, and hedges in Upper Cound.'

A common garden plant, often spreading rhizomatically onto roadsides or being dumped with garden rubbish. It sometimes forms very large patches on waste ground and roadside ditches, and it is frequent along lowland rivers. It is recorded in MG1 *Arrhenatherum elatius* grassland on the banks of the Severn in Shrewsbury; in OV10 *Senecio vulgaris* vegetation on waste ground at Shifnal (Trueman, 1981); in W6 *Salix* × *fragilis* woodland by the Severn in Shrewsbury; and in W8 *Fraxinus excelsior* woodland in the Bog at Wilderhope, by the Borle Brook at New England, and Perryhouse Dingle. It is almost ubiquitous at the tetrad scale, but it does not seem to spread far into semi-natural habitats, possibly because it is vulnerable to grazing, so it remains a largely synanthropic species.



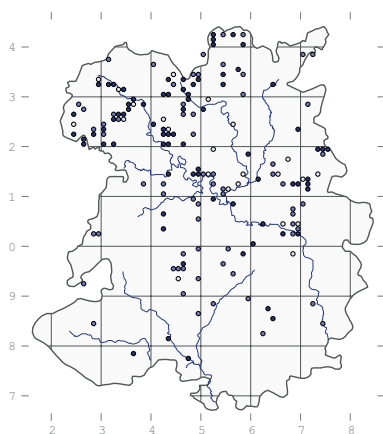
## *Berula erecta* (Hudson) Cov.

### Lesser Water-parsnip

Native. Local. Stable. Axiophyte: rivers, ditches and canals.

First record (as *Sium angustifolium*): Williams, 1796, 'in the moat at Hadnal.'

In slow-flowing rivers and associated wet meadows and ditches, often persisting in open wet woodland. It is recorded in A3 *Spirodela polyrrhiza* community in the Newport Canal at Newport (Trueman, 1981); in M22 *Juncus subnodulosus* fen-meadow at Crose Mere (Wigginton, 1979), in OV32 *Ranunculus sceleratus* on the banks of the river Roden at Tilley; and in W5 *Alnus glutinosa* woodland alongside the Bailey Brook at Millenheath, at Crose Mere and Sweat Mere.



## *Oenanthe fistulosa* L.

### Tubular Water-dropwort

Native. Rare. Declining. Axiophyte: mesotrophic standing water.

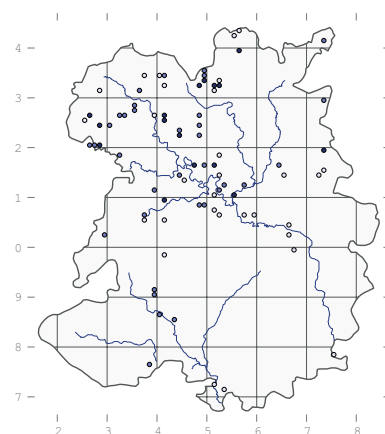
First record: Williams, c. 1800, 'sides of pools and bogs, common.'

If this species was common two centuries ago, it certainly is not now, and it is continuing to decline. Its main habitat is in ponds and marshes in the lowlands, where it is either eradicated by agricultural intensification or lost after sites are fenced off and succeed to woodland. The secondary population was in canals, which have now mostly either been restored or abandoned to scrub.

Trueman recorded it in S27 *Comarum palustre* at Brown Moss in 1983, and it was still there in Pool 5 as recently as 2006, but was very rare and threatened by the development of willow scrub and it has not been found since then despite searching. It used to occur around several of the other meres and mosses, sometimes in drainage ditches or marshy grassland nearby, as well as in the fringing emergent vegetation. It was known at Bomere Pool from 1841 (Leighton) to 1960 (E.M. Rutter); at Fenemere from 1959 (F. Rose) to 1996; at Hencott Pool from 1841 (Leighton) to 1979 (Wigginton); and at the Mere, from 1836 (J.E. Bowman) to 1891 (O.M. Feilden). It still occurs at Alkmund Park Pool (J. Ing, 2008).

It seems to have been a late colonist of abandoned canals, not being recorded until 1950 on the Llangollen Canal near Whixall Moss (C.M. Dony). It subsequently turned up on the Montgomery Canal at Aston Locks in 1954 (E.A. Wilson), on the Prees Branch Canal between 1966 (Sinker) and 1997, on the Shrewsbury Canal at Withington in 1958 (Rutter). The only recent canal record is from the abandoned Weston Arm of the Montgomery Canal at Westoncommon (J. Ing, 2009).

There are numerous ponds, ditches and marshy hollows where it has been recorded in the past, but few of these populations are still extant. An exception is the Deer Park at Attingham, where it is abundant in one small heathy pool. At Battlefield (SJ512167) there were two ponds found in 1993 whilst surveying the route of the proposed Shrewsbury bypass; one of these still remains in a field of cattle pasture close to the road. The pond contains S12 *Typha latifolia* swamp and a small population of *O. fistulosa*, along with *Apium inundatum* and *Potamogeton polygonifolius*. This community is probably not ideal for it, as there was no *T. latifolia* there until recently and it is probably becoming eutrophicated. This may be the pond mentioned by Leighton (1841) and Beckwith (1892).



## *Oenanthe silaifolia* M. Bieb.

### Narrow-leaved Water-dropwort

Recorded only once, by J.C. Melville and W.B. Allen in 1909, in rough grass by the roadside in Buildwas. They considered it to be a casual.

## *Oenanthe lachenalii* C.C.

Gmel.

### Parsley Water-dropwort

Native. Casual. Roadsides and canal banks.

It seems unlikely that this coastal species was ever anything other than a casual in Shropshire. W. Houghton (1870) reported that it had been found by R. Anslow in the Weald Moors in about 1865, but Anslow was not very reliable. Serjeantson and Phillips collected it at Sharpstones Hill in 1872; their specimen is in SHY and has been confirmed by W.H. Painter, E.M. Rutter and others. In 1980 P.A. Wolseley found a plant on the towpath of the Montgomery Canal at Queen's Head, a record that is also supported by a

specimen at SHY. It is a coastal plant of salt marshes that also occurs in some inland fens.

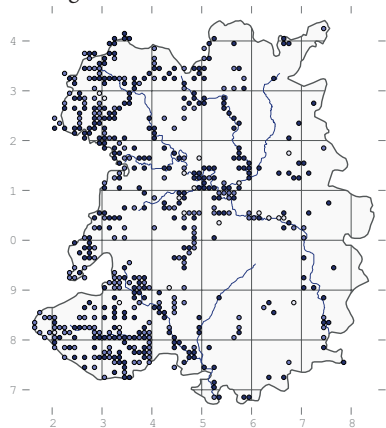
### *Oenanthe crocata* L.

#### Hemlock Water-dropwort

Native. Local. Stable. Rivers, wet woodland, marshy grassland.

First record: L. Brown, 1726, 'by ye ditch-sides everywhere about Bishop's Castle.'

Common along all the rivers in the county, often growing on the banks but also sometimes abundant in ditches and marshes in the flood plains. In the west of the county it is more widespread, growing in flushes in woodland and along small streams. It is an occasional component of MG10 *Holcus lanatus* grassland, on the margins of pools at Brown Moss or in ditches at Ruewood. In the latter site it is also recorded in MG13 *Alopecurus geniculatus* grassland (Trueman, 1984). By the river Severn below Shrewsbury Castle it occurs in tall OV26 *Epilobium hirsutum* vegetation, which is typical of the banks of eutrophic lowland rivers. It is not common around the meres, but it has been recorded in OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979) and in OV31 *Rorippa palustris* community in the drawdown zone around Pool 6 at Brown Moss. At Cole Mere it is frequent in W5 *Alnus glutinosa* woodland, which is quite unusual – it is more normally found in more eutrophic W6 *Salix* × *fragilis* woodland alongside rivers, as at Redhill Coppice by the Rea Brook or River Plantation by the Roden, where it is exceptionally abundant in flushes. In some meres the woodland approaches W6 owing to eutrophication, and it has been recorded in this situation at Cole Mere and Marton Pool, Chirbury. Elsewhere, it is frequent along canal banks, even where steel pilings have been used. A good place to see it is by the River Tern at Attingham, where it was recorded by Perring in 1972.



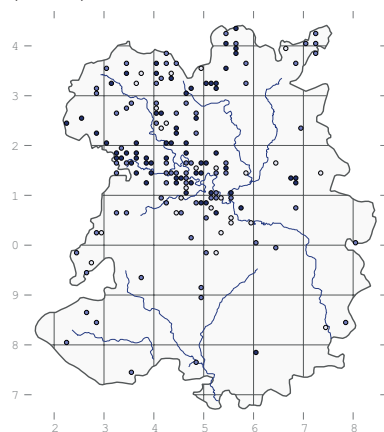
### *Oenanthe aquatica* (L.) Poiret

#### Fine-leaved Water-dropwort

Native. Local. Declining. Axiophyte: peat bogs, marshes.

First record: Williams, c. 1800, 'sides of pools, common.'

It is an unusual combination to be a perennial plant of a transient habitat. *Oenanthe aquatica* grows on bare organic mud on the margins of fluctuating water bodies. Typical habitat for it is in peaty woodlands on the margins of the meres and smaller pools of glacial origin, where long periods of inundation are only occasional events. Here it grows in W1 *Salix cinerea* woodland if the water level tends to remain high, as at Shomere Pool or Snipe Bog. It is more typical of W5 *Alnus glutinosa* woodland, as at Cole Mere, Haughmond Abbey and Oss Mere, or the drier, more eutrophic W6 *Salix* × *fragilis* at Hencott Pool. However it is not very tolerant of shade, and it tends to occur in abundance only after the tree cover has been reduced by drowning, felling or burning. In a more open habitat it has been recorded in OV30 *Bidens tripartita* on the margin of White Mere (M.J. Wigginton, 1979), but it is more often found in tall fens such as S12 *Typha latifolia* swamp at The Long Bog and Brown Moss, S26 *Phragmites australis* fen at Cole Mere, and S27 *Comarum palustre* at Snipe Bog and Brown Moss. In the floodplain of the Vyrnwy it grows in eutrophic ditches in S28 *Phalaris arundinacea* fen. These sites are all on peat soils in the lowlands. A smattering of records from the south-west of the county in Sinkers' Flora hints at a different habitat and a possible decline. It can be difficult to predict where it will occur, because it does only come up sporadically and it is short-lived, but Brown Moss is the most reliable site for it, with regular sightings since 1961 (Sinkers).



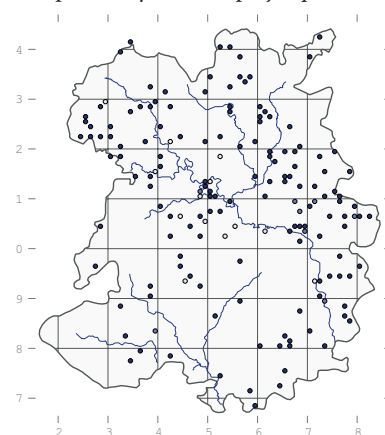
### *Aethusa cynapium* L.

#### Fool's Parsley

Native. Widespread. Stable. Arable fields, gardens, waste ground.

First record: Williams, c. 1800, 'gardens, common.'

Sometimes abundant in arable fields, especially cereal crops on sandy soils, including maize (notably at Lee Brockhurst in 2009) and wheat (Ensdon, 2008), and often in small quantities in field margins throughout the plain. W.E. Beckwith (1882) described it as common in gardens but not often in fields. Recent records suggest the reverse to be the case now, with just 10% of records since 1980 being from gardens. Road verges and waste ground are also common habitats, and in 1981 Trueman recorded it in OV19 *Tripleurospermum inodorum* vegetation on a new motorway verge near Tong. It is strictly lowland, being recorded up to about 200 m on the slopes of the Long Mynd and at Treflach. All plants in Shropshire appear to be the commoner and putatively native ssp. *cynapium*.



*Angelica sylvestris*

## *Foeniculum vulgare* Miller Fennel

Archaeophyte. Scattered. Increasing. Roadsides, railway lines, gardens, river banks.

First record: Williams, c. 1800, 'on the rocky ground below the old road up Lincoln Hill in Coalbrookdale.'

Occasional in towns on waste ground, in old abandoned gardens and on roadside verges. It is not persistent and it does not spread into the wild.

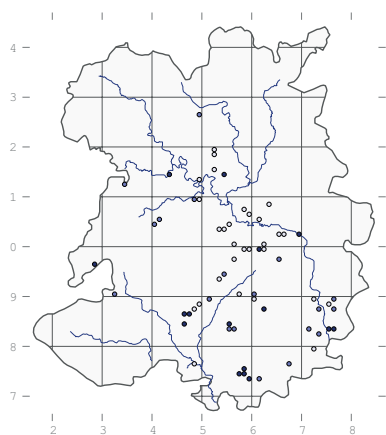
## *Silaum silaus* (L.) Schinz & Thell.

### Pepper-saxifrage

Native. Local. Decreasing. Axiophyte: grassland.

First record (as *Peucedanum silaus*): Williams, c. 1800, 'pastures in a clay soil about Sundorn etc.'

In unimproved grassland, typically MG5 *Festuca rubra* meadows, as at Tana Leas Farm (D.H. Wrench, 1995) and in similar meadows in places like Colleybrook Green (R. Rowe, 1982 & D.H. Wrench, 1994), Haughmond Hill, Knowbury (B. Elliott, 2005) and Westhope (R.A. Dawes, 2009). Sometimes it is found in other species-rich patches of grassland such as those beside the Severn Valley Railway at Highley (D.H. Wrench, 2002), by the path from the car park to up to Blakeway Hollow (R.J. Swindells, 2006) and alongside a track to a fishing pool at Pool Hall, Alveley in 2011. Lowland: up to about 250 m at Colleybrook Green (SO585750).

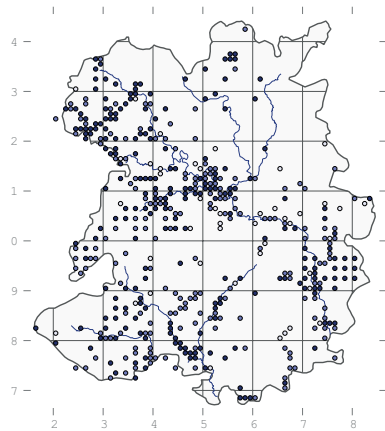


## *Conium maculatum* L. Hemlock

Archaeophyte. Local. Increasing. Riverbanks, canal sides, roadsides and waste ground.

First record: Williams, c. 1800, 'hedges and wastes, common.'

Widespread along roadsides and on river banks in the floodplain of the Severn and several other rivers, but only rare in the north Shropshire plain and on the hills. It is recorded in OV25 *Cirsium arvense* on an arable field margin at Kingshead and, rather atypically, in S14 *Sparganium erectum* swamp by the Severn at Buildwas (Trueman, 1981). It sometimes forms large stands on bare ground, as it has recently on a part of Prees Heath where there had been a fire. In 1917 J.C. Melvill – who always liked a good story – claimed it had 'spread itself so rapidly and persistently from a hedgerow inhabitant to arable land as to become a most pernicious weed' (*Record of Bare Facts* 27, 1918). Although it seems to be increasing its range steadily, it is not invasive in semi-natural habitats. A good place to see it is along the B4380 between Bicton and Montford Bridge, where it is abundant on roadside verges in OV23 *Dactylis glomerata* grassland. Lowland: up to about 260 m at Upper Treverward (P.R. Green, 2010).



## *Bupleurum subovatum* Link ex Sprengel

### False Thorow-wax

Neophyte. Casual. Last recorded in 1979. Gardens.

A bird seed casual, first recorded by Sinker in 1958 in the garden of Miss Jones's bungalow in Arscott; last recorded under a bird table in a garden in Beckbury by W.E. Hutton in 1979. Half a dozen intervening records were also from gardens with bird feeders.

[*Apium graveolens* L., Wild Celery Listed at Stank Meadow near Bishops Castle in Cox (1720-1731), Gough (1789) and various other historical Floras, but Williams could not find it there at the end of the 18<sup>th</sup> century and the record was not accepted by Sinker (1985).]

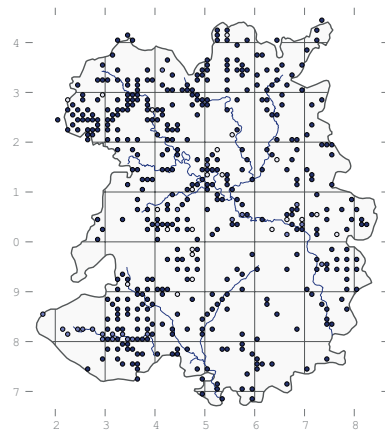
## *Apium nodiflorum* (L.) Lag. Fool's Water-cress

Native. Widespread. Stable. Rivers, ditches, canals, flushes, lake edges and wet grassland.

First record (as *Sium nodiflorum*): Williams, c. 1800, 'ditches, common.'

In wet hollows and drainage channels in grassland such as MG10 *Holcus lanatus* and MG13 *Alopecurus geniculatus* (Trueman, 1981) at Ruewood. It is recorded in M22 *Juncus subnodulosus* close to the edge of Crose Mere and in OV30 *Bidens tripartita* on the margin of Marton Pool, Chirbury (both M.J. Wigginton, 1979). By rivers it is found in OV26 *Epilobium hirsutum* alongside the Severn opposite Shrewsbury Castle and in OV32 *Ranunculus sceleratus* by the Roden at Tilley. In Wildmoor Pool it grows in S9 *Carex rostrata* (R. Tapper, 1983).

At Black Coppice and Sweat Mere it occurs in W5 *Alnus glutinosa* woodland, and at Marton Pool, Chirbury, it is even found in drier W6 *Salix × fragilis*. Although it is primarily a plant of lowland, eutrophic conditions, it grows as high as 450 m in the stream above Wildmoor Pool (SO42347619, 2012, BIRM).



[*Apium repens* (Jacq.) Lag., Creeping Marshwort

First recorded by Williams (as *Sium repens*) on Cound Moor in 1798. It was later found on a gravel island in the Cound Brook at Lower Cound by E.M. Rutter in 1960. Rutter showed a specimen to Sinker and later sent one to R.D. Meikle for confirmation, but in the absence of flowers and fruit it was not possible to identify it for certain. A specimen is in SHY.]



***Apium inundatum* (L.)**

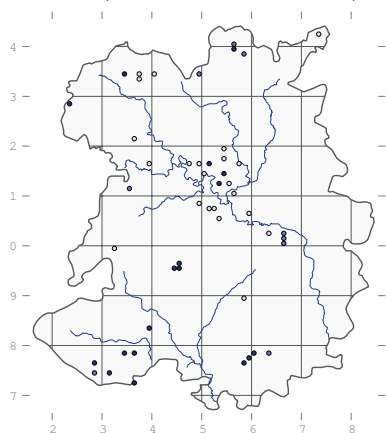
H.G. Reichb.

**Lesser Marshwort**

Native. Local. Stable. Axiphyte: lakes, ponds,

First record (as *Hydrocotyle inundata*): Williams, 1797, Uckington Heath.

On the fluctuating margins of lakes and pools on heaths, in OV35 *Lythrum portula* at Llyn Rhuddwyn (Trueman, 1981) and Brown Moss, and in S12c *Typha latifolia* swamp in a pool at Battlefield. A decline in the lowlands is matched by an apparent increase in the hills, possibly due to better recording. The first record of it in an upland site was in 1909, when J.C. Melvill found it at Black Marsh. It has subsequently been recorded at Hopesay Hill (E. Pisolkar, 2003), on the Long Mynd Golf Course (A.K. Thorne, 2000), Novers Hill (J. Clayfield, 2007), Stowe Hill (Clayfield, 2003) and Titterstone Cleve (E. Heywood-Waddington, 1983); up to a height of about 490 m in the latter site (SO596778, N. Sturt, 1997).

***Petroselinum crispum***

(Miller) Nyman ex A.W. Hill

**Garden Parsley**

Neophyte. Rare. Stable. Waste ground.

First record: J. Fraser, 1874, Ludlow.

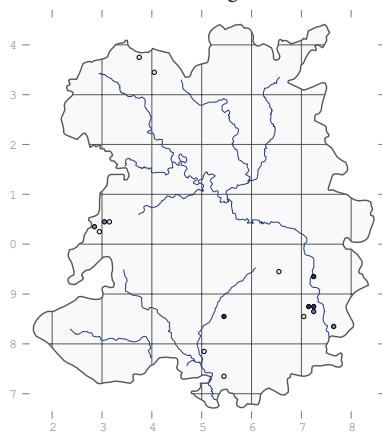
Although it has been recorded as a short-lived casual in many places, this species seems remarkably persistent at Bridgnorth, where it was first recorded by J.H. Thompson at The Hermitage in 1878, and is still present (J. Clayfield, 2000). Numerous people have recorded it in the interim, include G.C. Druce, who found it to be abundant around Bridgnorth, and well naturalised, in 1924. John Clayfield reports that it is the flat-leaved form that is present, not the crisped variety that is popular in culinary use. The only other recent record is from waste ground in Telford in 1998 (R.M. Stokes).

***Sison amomum* L.****Stone Parsley**

Native. Rare. Declining. Roadsides.

First records: Williams, c. 1800, 'Aston Aer; ditch banks and pastures about Chelmarsh, Billingsley, Cainham, etc.; Brockton near Worthen; between Brockton and Binweston.'

This is an unusual example of a southeasterly plant that is on the edge of its range in Shropshire and seemingly retreating. It is a plant of grassy roadside verges and ditch banks, often on damp soil. In about 1800, Williams recorded it in half a dozen places, but Leighton (1841) only added one site to his list, near Ellesmere. It was recorded in four places in the county in Sinker's Flora of 1985, but it only been seen in three sites since then. M.B. Fuller found it on a grassy bank adjacent to a road at Bouldon in 1986; R.M. Stokes found a new site at The Hermitage, Bridgnorth, in 2004; and there is a large and well-known population on the roadside near Chelmarsh church. Here it grows in unremarkable MG6 *Cynosurus cristatus* and MG1 *Arrhenatherum elatius* grassland.

***Cicuta virosa* L.****Cowbane**

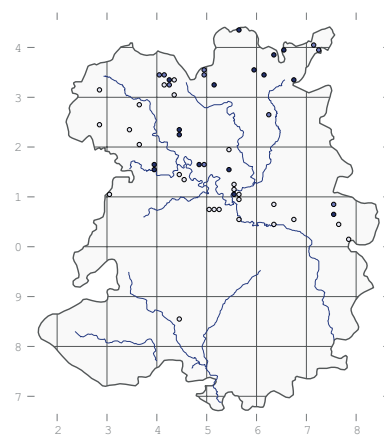
Native. Local. Stable. Axiphyte: lakes, pools and ditches.

First record: G. Bowles, 1632, 'in ditches about Ellesmere'.

Typical of the meres and mosses, sometimes in tiny kettlehole pools that would otherwise escape notice, and occasionally also in pools in peaty river basins on the plain. The name refers to its toxicity to cattle if the roots are eaten; the foliage does not seem to have this effect. It is recorded in S12a *Typha latifolia* swamp at Shrawardine Pool, where it is sometimes very abundant both on bare peat and on floating mats of vegetation. At Fenemere and Oss Mere it occurs in S24 *Calamagrostis canescens* reedbeds (M.J. Wigginton,

1979), and in all three of these sites it is also found in W5 *Alnus glutinosa* woodland, sometimes persisting in W6 *Salix × fragilis* as well, as at Shrawardine Pool in 2003.

It thrives in sites where the water level fluctuates, and huge numbers of plants sometimes spring up on bare peat left by receding water, as in a small roadside pond at Aychley Farm in 1997 (J. Edwards). Because of its sporadic appearance and disappearance in many sites, it is difficult to say whether it is really increasing or decreasing overall, but there are more current sites for it than at any comparable time in the past. Other recent records include New Park Farm, Shifnal (T.J. Pankhurst, 1999), a pool in the woods at Attingham Park (2005), and Walkmill Marsh near Market Drayton (A.K. Thorne, 2006). Lowland: up to about 100 m at Oss Mere.

***Ammi majus* L.****Bullwort**

Neophyte. Rare.

A rare alien, seemingly introduced with bird seed. First recorded by J.C. Melvill in 1906 at Meole Brace. Since then there are just three records: in a garden at Trefonen (R.A. Dawes, 1988), on a roundabout at Oakengates (R.M. Stokes, 2002) and in a field of birdseed at Moston (D.J. Evans, 2008).

[*Falcaria vulgaris* Bernh., Longleaf

J.C. Melvill (in *Record of Bare Facts* 33, 1924) claimed that there was a record for Shropshire, but that no further particulars were at present obtainable.]

[*Carum carvi* L., Caraway

Three records in Sinker's Flora: near Knowbury and Caynham (both C. Raikes, 1977) and Batchcott (T.E. Mitchell, 1980). Best considered unconfirmed.]

## Angelica sylvestris L.

### Wild Angelica

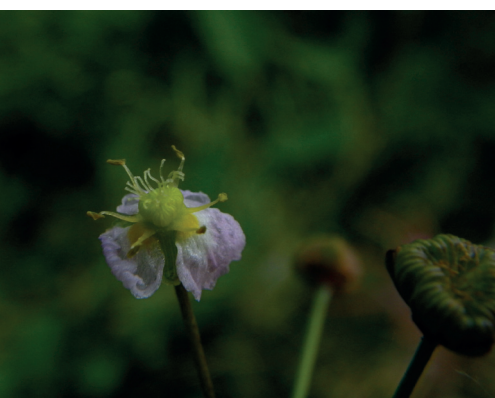
Native. Common. Stable. Rivers, damp grassland, swamps and wet woods.

First record: Williams, c. 1800, 'boggy grounds and moist ditch banks.'

In a wide variety of wetland habitats, from full sunlight to shady woods, at all altitudes, usually as scattered plants rather than dense stands.

It is recorded in MG1c *Filipendula ulmaria* grassland by the Llangollen Canal at Welshampton and the Severn in Shrewsbury; MG1e *Centaurea nigra* in Ropewalk Meadow; MG5 *Festuca rubra* at Pudding Bag; MG8 *Caltha palustris* at Crofts Mill (C. Walker, 1994) and Crose Mere; and MG10 *Holcus lanatus* at Hope Coppice.

In mires it is found in M10 *Carex dioica* at Trefonen Marshes (Trueman, 1981); M13 *Palustriellla commutata* on Hope Bowdler (P. Eades, 2010) and Trefonen; M22 *Juncus subnodulosus* at Black Coppice, Crose Mere, Sweeny Fen and Trefonen; M23 *J. effusus* at Balmer Heath, Cole Mere (M.J. Wigginton, 1979) and elsewhere; both M24 and M25 *Molinia caerulea* at Black Coppice; in all stands of M27 *Filipendula ulmaria*; and M35 *Montia fontana* on Caer Caradoc (R. Meade, 2010).



*Alisma plantago-aquatica*  
(Dan Wrench)

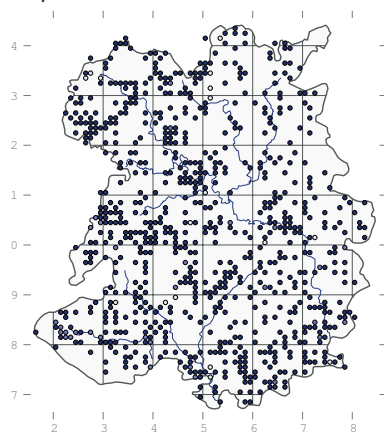


*Luronium natans* at Bomere Pool

It is also frequent in wet tall herb communities and swamps such as OV26 *Epilobium hirsutum* at Betton Pool (Wigginton, 1979); S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S7 *C. acutiformis* in the Old River Bed; S14 *Sparganium erectum* at Betton Pool (Wigginton, 1979); S18 *C. otrubae* at the Speller; S24 *Calamagrostis canescens* at Fenemere and Oss Mere (Wigginton, 1979); S26 *Phragmites australis* at Marton Pool, Chirbury (Wigginton, 1979) and Black Coppice; S27 *Comarum palustre* at Bomere Pool (Wigginton, 1979) and the Mere.

Finally, it can often be found on woodland edges and along streams, in habitats such as W4 *Betula pubescens* at Bomere Pool; W5 *Alnus glutinosa* around all the meres; W6 *Salix × fragilis* around many meres and along rivers in places like Loamhole Dingle and the Dell, Sundorne; W7 *Lysimachia nemorum* at Birchen Park, Brook Vessons and Fastings Coppice; W8 *Fraxinus excelsior* at Redhill Coppice, Whitwell Coppice and elsewhere; and W9 *Sorbus aucuparia* at Betchcott Hollow.

A good place to see it is alongside the River Severn in Shrewsbury, where it was first recorded by Leighton in 1841, or at The Old River Bed, where it is very abundant.



## Pastinaca sativa L.

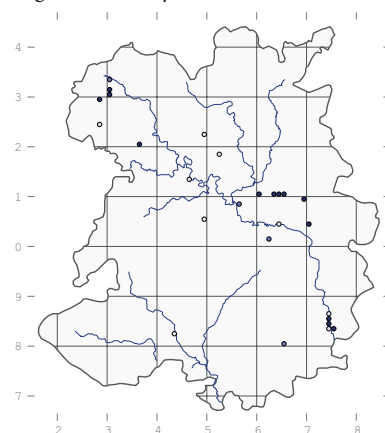
### Wild Parsnip

Native. Scarce. Stable. Roadsides, quarries, waste ground.

First record: E. Elsmere, 1841, Astley.

Fairly common in much of England, but absent from upland areas and western regions, and Shropshire is on the edge of its range. It tends to turn up on roadsides and other transport corridors on base-rich or calcareous soils. The best populations occur around the Highley-Alveley Country Park, where it was first recorded by G.

Jordan (at Hampton Loade) in about 1856. In the last decade or so it has spread along the M54 from Telford through to the A5 at Wolf's Head and, most recently, to Oswestry. In the past it grew in some interesting places, but it was never more than an introduced casual. It was known on the ruins at Viroconium from 1880 (W.E. Beckwith) until 1927 (J.C. Melvill) and in the limestone quarries at Oreton from 1856 (Jordan) till 1967 (G.P. Richards), but Sinker (1985) considered it extinct in the county. All records mapped are of *P. sativa* ssp. *sativa* rather than the cultivated vegetable variety.



## Heracleum sphondylium L.

### Hogweed

Native. Widespread. Stable. Grassland and open woodland.

First record (as *H. sphondylium* var. *angustifolium*): G. Bowles, 1632, Birch.

Very common on roadsides in MG1 *Arrhenatherum elatius* grassland throughout the county, and equally frequent although less abundant, in meadows of MG5 *Festuca rubra* in places like Derrington (A. Hillman, 1992) Hilltop, Ropewalk and Stretton Westwood (D.H. Wrench, 1995) and CG3 *Bromopsis erecta* at Hilltop.

It is frequent in open woodland such as a clearing of M27 *Filipendula ulmaria* in Tunstall Wood, and it is recorded in W1 *Salix cinerea* at Berrington Pool; W6 *Salix × fragilis* at Fenemere, the Old River Bed, by the Severn in Shrewsbury and by the Worfe at Beckbury; W7 *Lysimachia nemorum* at Upper Vessons; W8 *Fraxinus excelsior* in many places, including Stokes's Barn (Trueman, 1981) and Brownheath Moss; W10 *Quercus robur* at Nant-y-myssels; and W24 *Rubus fruticosus* scrub on a roadside verge at Day Houses. Although it is tolerant of damp conditions, Martin Wigginton's (1979) record of it in A8 *Nuphar lutea* community at Betton

Pool is an unusual one. It also grows in OV24 *Urtica dioica* on a mud bank by the English Bridge in Shrewsbury, in S9 *Carex rostrata* on the edge of Berrington Pool and S14 *Sparganium erectum* at Betton Pool (both Wigginton, 1979). It is not restricted by altitude in the county and is probably present in every tetrad.



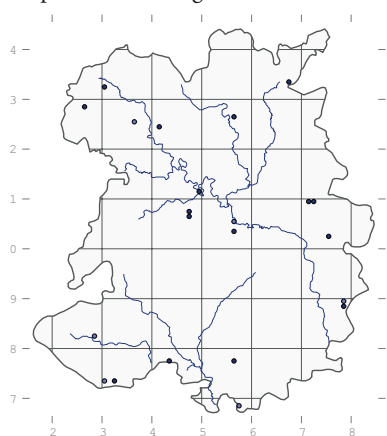
***Heracleum mantegazzianum*** Sommier & Levier

**Giant Hogweed**

Neophyte. Scarce. Increasing. Gardens, roadsides, river banks.

First record: D.M. Evans & M.J. Connell, 1972, Rea Brook at Belle Vue.

Although this is an abundant and troublesome weed in eastern England, it is still quite rare in Shropshire and it seems to be relatively easily controlled. There is a large population along the M54 in Telford, along both sides of the road, spreading into adjacent waste ground and grassland, but elsewhere it is rare. At the bottom of Lyth Hill is a garden where it grows, and it sometimes spreads from there. It was presumably cultivated at Llanforda (M. Wainwright, 1982) and Cound Hall (P. Parker, 1976), but otherwise it tends to crop up on roadsides where mowing keeps it from setting seed.



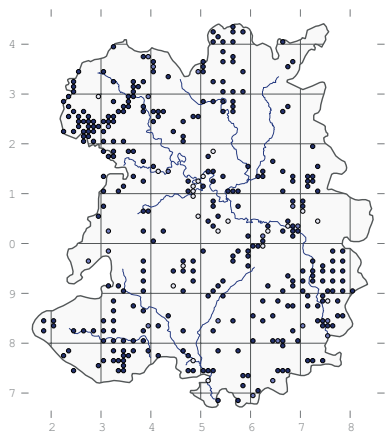
***Torilis japonica*** (Houtt.) DC.

**Upright Hedge-parsley**

Native. Widespread. Stable. Hedges, field margins and waste ground.

First record (as *Caucalis anthriscus*): Williams, c. 1800, 'ditch banks, common.'

Typical of roadside hedgebanks, typically in rather open MG1 *Arrhenatherum elatius* grassland, as along a farm track at Lanegreen. It also grows on field margins or abandoned corners of field, and among crops if they are perennial, as in a field of asparagus at Dudmaston (J. Handley, 2009). A good place to see it is at Granville County Park, where it was found to be widespread by A.K. Thorne in 2004.



***Torilis arvensis*** (Hudson) Link

**Spreading Hedge-parsley**

Archaeophyte. Extinct. Last recorded in 1886. Arable fields.

First record (as *Torilis infesta*): Williams, c.1800, 'cornfields, common.'

A formerly common arable weed which was eradicated in the 19<sup>th</sup> century. Williams and Leighton considered it common, but the last record dates from 1886 when T. Butler recorded it at Cound. Diamond (1891) listed it as common in the Oswestry area, but it is likely that this was just copying of earlier records.

***Torilis nodosa*** (L.) Gärtn.

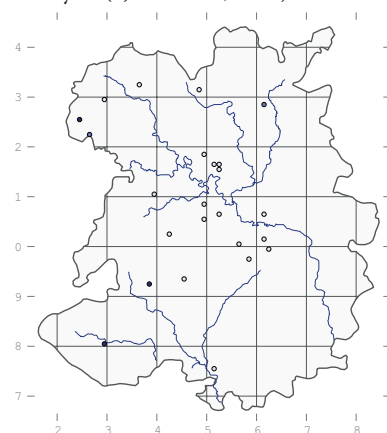
**Knotted Hedge-parsley**

Native. Rare. Decreasing. Axiophyte: grassland.

First records (as *Caucalis nodosa*): Williams, c. 1800, 'pastures etc. about Berrington and Condover.'

Now very rare, but formerly widespread on bare soil in arable fields, heavily grazed grassland and rock outcrops. The only recent record of it is of a few plants in CG7 *Thymus polytrichus* on rock outcrops on

Moelydd, where it was found by R.A. Dawes in 1996. Until recently it also grew at Clun Castle (Trueman, 1980-1994), and it cropped up in Wentnor when an old paddock was dug over to make a garden (S. Kingsbury, 1994). Since 1864 (by Miss Lloyd) it was known on Llanymynech Hill, just on the border between Shropshire and Montgomeryshire, but it was last seen there by E.D. Pugh in 1978. Historical records show that it was once quite widespread as an agricultural weed, and Benson collected it on a roadside near Churton Farm in 1897 and 1898 (SHYB). Lowland: up to 270 m on Moelydd (SJ24402571, 2012).



***Caucalis platycarpus*** L.

**Small Bur-parsley**

Recorded as *C. lappula* or *C. daucooides* by W.B. Allen and J.C. Melvill at Buildwas in 1907 (*Transactions* 1907). No specimen has been traced, so perhaps it should be considered unconfirmed.

***Turgenia latifolia*** (L.) Hoffm.

**Greater Bur-parsley**

Recorded as *Orlaya grandiflora* by W.B. Allen at Buildwas in 1907 (*Transactions* 1907); and collected by a schoolchild in a chicken run at Prees Green in 1952. The recorder is given as Miss M. Heron in *Transactions* 1960 – possibly she was the schoolteacher. A specimen from the herbarium of R.C.L. Burges is at BIRM.

***Daucus carota*** L.

**Wild Carrot**

Native. Local. Stable. Calcareous grassland, roadsides, railways and waste ground.

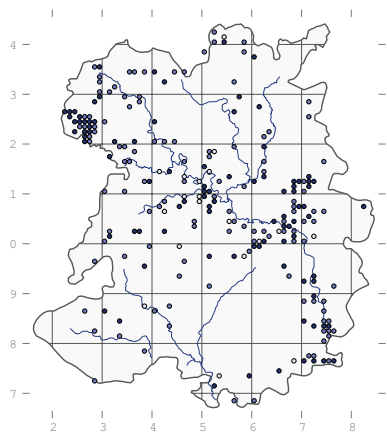
First record: Williams, c. 1800, 'pastures and cornfields, common.'

Generally a strong calcicole, found in limestone grassland along the Wenlock Edge and in the Oswestry Uplands,



## Vascular plants

but often only as an introduction in wildflower seed mixes elsewhere. It is perhaps most common in quarries, where strongly calcareous and disturbed soils favour it. At Llanymynech Rocks and Dolgoch Quarry it grows in CG2 *Avenula pubescens* grassland, and on the old Severn Valley Railway at Sutton, Shrewsbury, it was recorded in MG1b *Arrhenatherum elatius*. It is particularly frequent in former industrial sites such as Granville and Highley-Alveley Country Parks, where it was probably sown originally but the dry, friable soils are entirely suitable. A good place to look for it is along the Severn Valley Railway, but for a more natural site Windmill Hill in Much Wenlock is worth a visit. It is not restricted by altitude in this county, but the higher hills tend to have acid soils, so it is only found up to about 250 m at Snailbeach and the Novers – both former industrial sites.



## Monocots

### Acoraceae

#### *Acorus calamus* L.

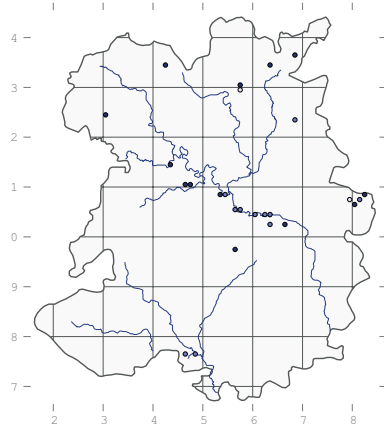
##### Sweet-flag

Neophyte. Scattered. Stable. Lakes, canals, rivers.

First record: G. Lloyd, 1841, Tong Lodge Lake.

Occasional on the margins of lakes and rivers, often amongst *Iris pseudacorus* and *Sparganium erectum*, where it can be difficult to spot if it is in small quantity. In many of its sites it was probably introduced inadvertently amongst other 'reeds' planted by fishing enthusiasts. It is recorded as occasional along the Severn between Shrewsbury and Ironbridge in Sinker's Flora, but the only recent records are from Cronkhill. It also grows by the Montgomery Canal at Redwith (A.K. Thorne, 1998). Most other sites

are artificial ponds and lakes such as Hawkshead Pool (where it was first recorded by W.E. Beckwith in 1882), Moon Pool at Benthall (G. Potts, 1901), a farm pool at Betton (A.P. Bell, 1977), a pond at Moreton Say, and Mousecroft Lane Gravel Pit (A.K. Thorne, 2006). At Newton Mere it was probably planted by the fishing club, which was trying to increase the amount of fringing vegetation. It appears to be barely naturalised, and it hardly spreads from its introduction sites. There is no recorded S15 *Acorus calamus* swamp in the county.



### Araceae

#### *Lysichiton americanus*

Hulten & H. St John

#### American Skunk-cabbage

Neophyte. Rare.

Barely naturalised as a garden escape: 'four plants in the edge of a stream at Horsehay' (SJ673074, R.M. Stokes, 1995), 'four plants by the stream opposite the pub at Picklescott' (SO435994, D.H. Wrench, 2006), and by the Claverley Brook at Lower Hopstone (M.S. Duffell, 2008).

#### *Calla palustris* L.

##### Bog Arum

Neophyte. Rare.

In a drained moat at Shawbury (SJ561211, E.A. Williams, 1974) and introduced into a farm pool at Betton (SJ681362, A.P. Bell, 1977).

#### *Arum maculatum* L.

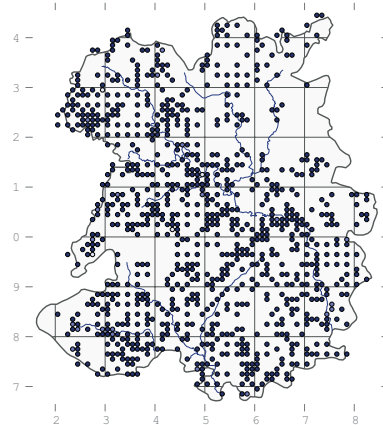
##### Lords-and-ladies

Native. Widespread. Stable. Hedges,

First record: Williams, c. 1800, 'hedges, common.'

Frequent in open woods and woodland edge. It is recorded in W6 *Salix* × *fragilis* at White Mere; W6d *Sambucus nigra* by the Severn at Shelton Rough; W8

*Fraxinus excelsior* woodland and hedges in many places, including Limekiln Wood, Llynclys Hill and Stevenshill; W21 *Crataegus monogyna* scrub on a hedgebank by the Shrewsbury Canal at Uffington; and in W24 *Rubus fruticosus* scrub on a hedgebank at Nobold and a road verge at Day Houses. It grows in hedges wherever they occur, but is absent from the tops of the hills and very rare in the most intensively farmed parts of the plain.



#### *Arum italicum* Miller

##### Italian Lords-and-ladies

Neophyte. Scattered. Increasing. Hedges, river banks and waste ground.

First record: S. O'Donnell, 1995, 'roadside at Ludstone, near Claverley, SO796944.'

A garden escape, increasingly turning up on roadsides near houses, sometimes becoming established on river banks, as along the Stoke Brook at Stoke on Tern or by the River Tern at Eaton.

### Lemnaceae

#### *Spirodela polyrrhiza* (L.)

Schleiden

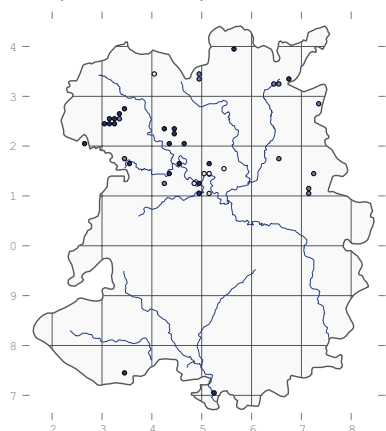
#### Greater Duckweed

Native. Local. Stable. Axiophyte: meres, rivers, ponds and canals.

First record (as *Lemna polyrrhiza*): Williams, c. 1800, 'in Ellesmere mere; in a pond below Haghmon Abbey; canal between Uffington and Shrewsbury.'

In still or slow-moving water, but more difficult to find in swift-flowing rivers such as the Severn. For example, it has only been recorded twice in the Severn in Shrewsbury: once in 1896 (Hamilton) and again in 2011. A good site for it is Fenemere, where it was first recorded by F. Rose in 1959 and it still grows in S24 *Calamagrostis canescens* fen, spreading into W5 *Alnus glutinosa* woodland. Its characteristic aquatic habitat is A3 *S. polyrrhiza* community, which would be expected in canals, but we have no

examples of this yet in the county. Other well-known sites include Merrington Green (first recorded by Perring in 1993), the Montgomery Canal at Aston Locks (E.D. Pugh, 1981) and Walford Pool (P. Parker, 1990).



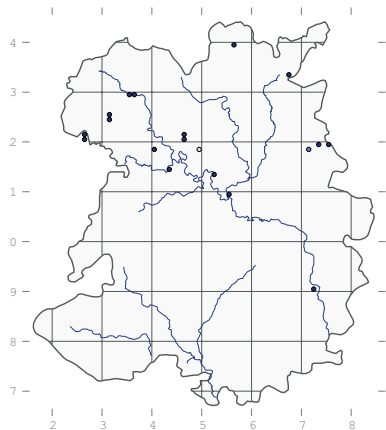
### *Lemna gibba* L.

#### Fat Duckweed

Native. Local. Stable. Rivers, ponds, canals.

First record: W. Phillips, 1885, 'pool near Albrighton.'

Mainly a canal plant, being present in the Newport Canal (first recorded by E.M. Rutter, 1955) and the Montgomery Canal in many places. It is known in the River Tern at Attingham (first recorded by P. Parker in 1989) and it was apparently found all along the Severn by C.G.A. Paskell (Sinker 1985) but we do not have the details. Otherwise it is usually recorded in ponds in places like Brown Moss, Merrington Green and Monkmoor Sewage Works.



### *Lemna minor* L.

#### Common Duckweed

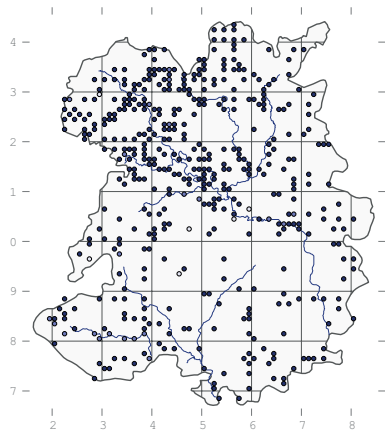
Native. Widespread. Stable. Ponds, rivers, canals, ditches.

First record: Williams, c. 1800, 'pits and ponds.'

Very common in ponds, most typically in A2 *L. minor* community as recorded at Brown Moss, but also in

A3 *Spirodela polyrhiza* in the Newport Canal (Trueman, 1981) and A10 *Polygonum amphibium* at Berrington Pool and Brown Moss. It often spreads into grassland when water levels rise and it has been found in MG10 *Holcus lanatus* and MG13 *Alopecurus geniculatus* at Brown Moss; M23 *Juncus effusus* at Cole Mere (M.J. Wigginton, 1979) and Oxon Pool; in OV30 *Bidens tripartita* on the margins of Newton Mere and OV32 *Ranunculus sceleratus* at Oxon Pool. It is also common in swamps, where it often grows on wet mud as well as in standing water in communities such as S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S4 *Phragmites australis* at Fenemere (Wigginton, 1979); S6 *Carex riparia* at Fenemere; S12 *Typha latifolia* at Brown Moss, Shrawardine Pool, Snipe Bog and elsewhere; S13 *T. angustifolia* at Berrington Pool (Wigginton, 1979) and Marton Pool, Chirbury; S14 *Sparganium erectum* at Kettle Mere, Old Oswestry and by the Severn at Buildwas (Trueman, 1981); S17 *C. pseudocyperus* at Oxon and Shrawardine pools; S22 *Glyceria fluitans* in the disused Coalport Canal (Trueman, 1981); S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Top Pool; and S27 *Comarum palustre* at Bomere Pool (Wigginton, 1979), Brown Moss (Trueman, 1983), Shrawardine Pool and the Moors, Ellesmere.

It sometimes persists in wet woodland such as W1 *Salix cinerea* carr at Snipe Bog; W5 *Alnus glutinosa* at Brownheath Moss, Cole Mere, Fenemere, Haughmond Abbey and elsewhere; and W6 *Salix × fragilis* at Cosford Wood and Hencott Pool. Although it is mostly a lowland plant it occurs as high as 531 m on Brown Clee (SO59368656, Whild & Trueman, 2011).



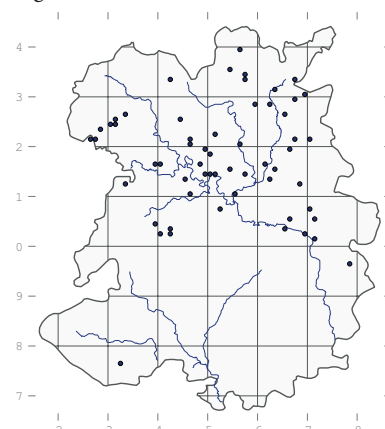
### *Lemna minuta* Kunth

#### Least Duckweed

Neophyte. Local. Increasing. Ponds, canals.

First record: Anon., 1989, Montgomery Canal at Aston Locks (Nature Conservancy Council field course).

Now common in ponds and canals, often thriving in rather shady sites. In Haughmond Abbey Wood it grows in a pond overgrown with W5 *Alnus glutinosa* woodland. Good places to see it include Merrington Green (first recorded there by J. Martin in 1989) and in Pool 3 at Brown Moss. There are no records of it in rivers yet, but otherwise its ecology is very similar to that of *L. minor* and they often occur together.



### *Lemna trisulca* L.

#### Ivy-leaved Duckweed

Native. Local. Decreasing. Meres, ponds, canals.

First record: Williams, c. 1800, 'pools and ponds.'

Occasional in lakes and ponds, often in quite species-rich assemblages, but sometimes also in less interesting sites. It has been recorded in A2b *L. trisulca* community in pools at Brown Moss; A3 *Spirodela polyrhiza* in the Newport Canal (Trueman, 1981); S12 *Typha latifolia* in a field pond at Black Coppice; S14 *Sparganium erectum* in Betton Pool (M.J. Wigginton, 1979); and S27 *Comarum palustre* at Brown Moss (Trueman, 1983). It appears to have declined in parts of north Shropshire, but it may just be that an earlier surveyor was very diligent about field ponds in that area.

## Alismataceae

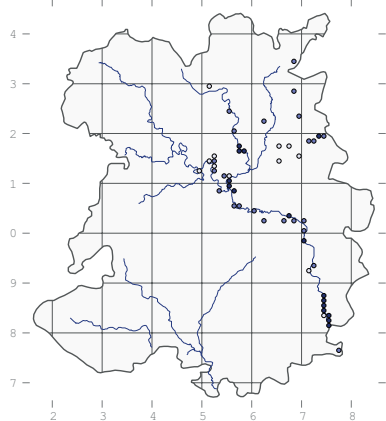
*Sagittaria sagittifolia* L.

## Arrowhead

Native. Local. Decreasing. Axiophyte: rivers.

First record: Williams, c. 1800, 'ponds and ditches, common.'

Occasional in the lower reaches of the Roden and Tern, and in the Severn below Shrewsbury. It has also been recorded in several canals, including the Shrewsbury (Leighton, 1832 – N.M. Mackenzie, 1950) and Newport (W.H. Painter, 1907 – T. MacLean, 1993), but it seems to have gone from them now. Although it was well known in the Weald Moors in the 19<sup>th</sup> century, it also seems to have gone from there.

*Sagittaria latifolia* Willd.

## Duck-potato

Neophyte. Rare.

In one of the ponds on Merrington Green in 2000 and 2001.

*Baldellia ranunculoides* (L.) Parl.

## Lesser Water-plantain

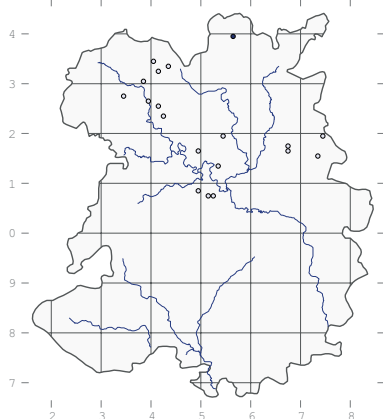
Native. Rare. Decreasing. Axiophyte: pools and wetlands.

First records (as *Alisma ranunculoides*): Williams, c. 1800, 'round the edge of Bomere Pool; Berrington pool; Betton pool; Hencote pool; ditches near Hordley, Newport, etc.'

Formerly widespread on the margins of the meres, where fluctuating water levels used to create bare substrate on which it would thrive, and in various other wetland sites. A combination of eutrophication and stabilizing of the water level has led to its eradication, although some plants did appear around the edge of the main pool at Brown Moss (M. O'Connor, 2005) after scrub clearance operations disturbed the seed bank. This was its last site, where it had gone extinct in the mid-1990s.

The other meres where it used to occur are Berrington Pool (H.M. Auden, 1907), Berth Pool (W. Beacall, <1905), Bomere Pool (G. Lloyd, 1831), Hencott Pool (Leighton, 1841), Cole Mere (A. Bloxham, 1836 – R.M. Serjeantson, 1880), the Mere (Bloxham, 1841 – Serjeantson, 1880) and White Mere (W.W. Beckwith, 1880 – A. Ley, 1882).

Other sites include a ditch on the side of Baggy Moor (Beacall, <1905), Westonwharf (possibly the same place) (W. Phillips, <1905), 'moist ground beyond Haughmond Hill' (Leighton, 1841), 'pool by the canal at Lilleshall' (Higgins, 1841), Rednal Moss (W. Whitwell, 1865-6), Shawbury Heath (E. Elsmere, 1841) and in a ditch 'on the Duke of Sutherland's private road leading to Kinnersley' (R.G. Higgins, 1841 – Beacall, <1905).

*Luronium natans* (L.) Raf.

## Floating Water-plantain

Native. Scarce. Decreasing. Axiophyte: lakes, rivers and canals.

First record: Williams, 1796, 'by the side of the water at Sundorn in the wood.'

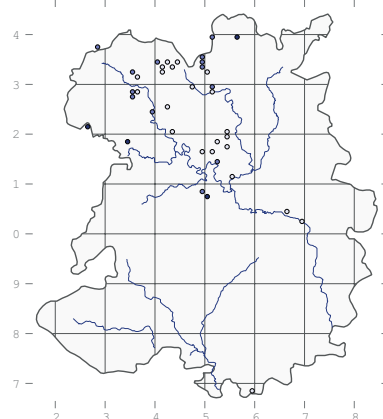
Once common in the meres, but now restricted to Bomere Pool, where it occurs in shallow water around the margins, typically in A8c *Nymphaea alba* community and S13 *Typha angustifolia* swamp. It also used to grow at Brown Moss, in Pools 3, 4 and 6, but it died out in the late 1980s as a result of scrub encroachment around the shallow pools. Following drastic clearance work around the main pool (no. 6) a few plants appeared in 2006 (M. O'Connor) where they grew in S12 *Typha latifolia* swamp but this was not suitable, and it soon died out again.

It also sometimes grows alongside rivers if there is an upstream source of propagules, and the plants that were found in farmland in the floodplain of the Severn at Edgerley in 2003 (SJ346181, A.K. Thorne) were possibly washed down from a lake in Wales.

This site seems an unlikely one to support a stable population, but a few plants were still present in 2009, despite the field being neglected and overgrown with *Glyceria maxima*.

The only other recent site for it was in the Montgomery Canal at Llanymynech in 1986 (O.M. Stewart), but it has now gone from the Shropshire lengths of the canal. It is often misrecorded for *Alisma plantago-aquatica*. The following is a full list of sites for which there are confirmed or reasonably credible records.

Astley (E. Elsmere, 1841), Battlefield (W. Beacall, <1905), Blake Mere (Williams, c. 1800 – O.M. Feilden, c. 1909), Bomere Pool (G.H. Griffiths, c. 1870), Brown Moss (E.M. Rutter, 1955 – M. O'Connor, 2006), Coalport Canal (F. Dickinson, <1901), Ebreywood (Williams, c. 1800), Grange Farm, Edgerley (A.K. Thorne, 2003 – 2009), Hencott Pool (A. Aikin, 1805 – Leighton, 1841), Llangollen Canal (R.M. Serjeantson, 1880 – Perring, 1972), Montgomery Canal (T.P. Diamond, 1891 – O.M. Stewart, 1986), Newton Mere (W.E. Beckwith, 1880), Prees Branch Canal (W. Phillips, <1905 – Sinker, 1966), River Perry (Miss Ormond, 1924), River Roden (Williams, c. 1800), River Teme (J. Babington, 1803), near Shawbury and Shawbury Heath (both Williams, c. 1800), Shrewsbury Canal (W.E. Beckwith, 1880 – M.J. Lee, 1944), Sundorne Pool (Williams, 1796), the Mere at Ellesmere (A. Bloxham, 1835 – E. Knowling, 1923), Walford Pool (T.C. Eyton, 1841), Wem Hall (J.C. Melvill, 1909-1917), Westminster Pool, Coalbrookdale (Dickinson, 1895), Weston Branch Canal (W. Beacall, <1905) and White Mere (Williams, c. 1800 – Feilden, 1909).



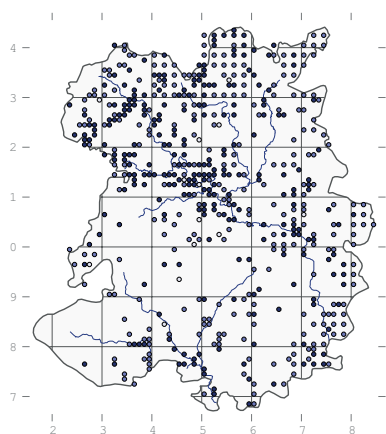


***Alisma plantago-aquatica* L.****Water-plantain**

Native. Local. Stable. Canals, ponds, rivers, ditches and edges of meres.

First record (as *Alisma plantago*): Williams, c. 1800, 'ponds and ditches, common.'

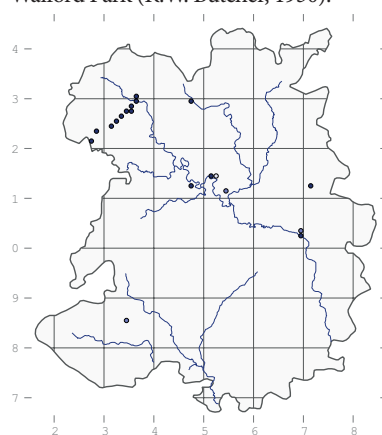
In a range of habitats, from open water through swamps to wet woodland, usually on bare mud. It is recorded in open water in A2 *Lemna minor* and A2b *L. trisulca* communities in pools at Brown Moss, where the less well-known aquatic form sometimes occurs, with long strap-shaped leaves and no flowers. It also grows in MG10 *Holcus lanatus* and MG13 *Alopecurus geniculatus* at the same site; and M23 *Juncus effusus* at Oxon Pool. There are also records of it in OV30 *Bidens tripartita* on the edge of a pool at Black Coppice, at Marton Pool, Chirbury, and White Mere (both M.J. Wigginton, 1979); OV32 *Ranunculus sceleratus* at Oxon Pool; S9 *Carex rostrata* on the edge of Berrington Pool (Wigginton, 1979); S12 *Typha latifolia* at Brown Moss and in a pool at Battlefield; S14 *Sparganium erectum* at Castle Pools, Telford (Trueman, 1981) and Brown Moss; S17 *Carex pseudocyperus* at Oxon Pool; S22 *Glyceria fluitans* in the Coalport Canal (Trueman, 1981); S24 *Calamagrostis canescens* at Fenemere (Wigginton, 1979); and S27 *Comarum palustre* at Brown Moss. Although it is not very tolerant of shade, it has been found in W5 *Alnus glutinosa* carr at Haughmond Abbey Wood and Oss Mere. Generally lowland, but up to 430 m in flushes above Wildmoor Pool (SO424964, Whild, 1995).

***Alisma lanceolatum* With.****Narrow-leaved Water-plantain**

Native. Scarce. Stable. Axiophyte: canals, pools, rivers.

First record (as *Alisma plantago* var.  $\beta$ , *lanceolata*: Williams, c. 1800, 'at the edge of the water at Sundorn.'

Most common in canals, specifically the Coalport Canal (where it was first recorded by W.H. Painter in 1895) the Montgomery Canal (J. Alder, 1985), the Shrewsbury Canal (I. Haig-Brown, 1959, ABS) and a derelict canal in Granville Country Park (R.M. Stokes, 1997). It is still present in all of them. There are also records of it in Copthorne Mere, the River Roden at Spenford Bridge, and Walford Park (R.W. Butcher, 1930).

***Damasonium alisma* Miller****Starfruit**

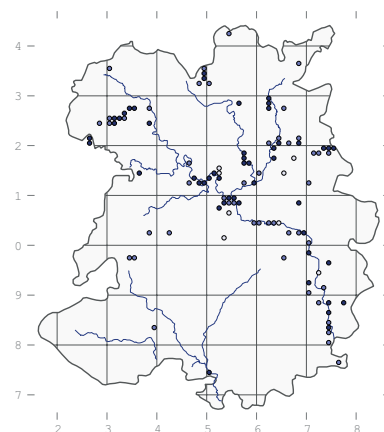
Native. Rare. Last recorded in 1849. Lakes and ponds.

First records (as *Alisma damasonium*): Williams, c. 1800, 'by the side of Ellesmere mere; on Aberly wood.'

A doubtfully native species, formerly occurring on damp, closely grazed commons but now almost extinct in Britain. It was recorded several times at the Mere at Ellesmere until 1849 (Anon., NMW), but it was never seen at Ebury Wood again. Watson (1835) quotes J.E. Bowman as saying that it grew in most of the Shropshire meres, but that seems unlikely.

Roden, Morda, Tern and Worfe, and in the Teme at Ludlow. In Shrewsbury it grows in the Severn in A11 *Myriophyllum spicatum* community in eutrophic and often very murky water. In the marginal vegetation it is more likely to flower. It is most typical of S14 *Sparganium erectum* swamp, where it usually occurs in small quantities.

Away from rivers it is a component of the fringing vegetation around pools and lakes. At Berrington Pool it grows in S14 swamp on the margin and in S9 *Carex rostrata* further out in the water. It is probably introduced into many garden ponds, but the only record suggesting that is from Hopesay in 1927, where H.S.T. Richardson considered it to be almost certainly planted; it may also have been deliberately planted in the new wetlands adjacent to the Hodnet Bypass (D.H. Wrench, 2007). It was formerly common along the canals, having first been recorded on the Shrewsbury Canal (Leighton, 1841), but it is becoming rare in canals that are heavily boated. It was frequent on the Montgomery Canal, but in the last few years it has retreated to disused sections and side arms. A good place to see it is at the Prees Branch Canal, where it was first recorded by Sinkin in 1966.

**Butomaceae*****Butomus umbellatus* L.****Flowering Rush**

Native. Local. Stable. Axiophyte: rivers, canals, ponds and lakes.

First record: Williams, c. 1800, 'The river Severn and Eaton Mascott Pool.'

Frequent along the Severn and some of its major tributaries, including the



*Potamogeton polygonifolius*

## Hydrocharitaceae

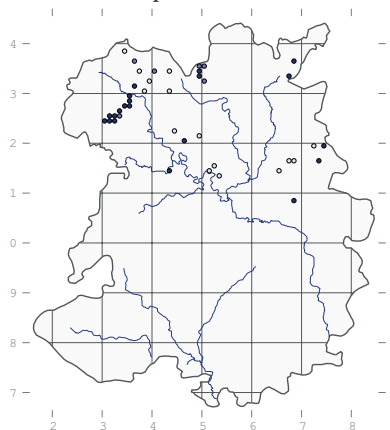
### *Hydrocharis morsus-ranae* L.

#### Frogbit

Native. Local. Stable. Axiophyte: canals, ponds.

First records: Williams, c. 1800, 'ditches about Newport, Kynnersley, Ellesmere, Hardwick, Hordley, pits about the Home Barns near Sundorn, canal between Uffington and Shrewsbury.'

Characteristic of A3 *Spirodela polyrhiza* community, as in the Newport Canal (Trueman, 1981). There are recent records of it in various places along the Montgomery Canal, although it may now be restricted to the Aston Locks reserve and the Rednal Arm since the canal was opened to navigation; a quarry pool in Newport; the Newport Canal at Newport; various pools at Preston Montford, where it has been planted; the Prees Branch Canal; a pond at Walkmill Marsh reserve near Market Drayton; and a site in Telford (SJ60Z, B. Herring, 2008) where it may also have been planted.

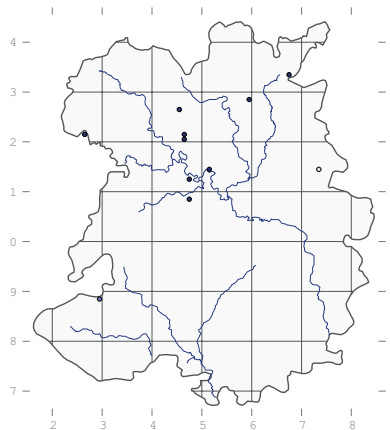


### *Stratiotes aloides* L.

#### Water-soldier

Neophyte. Scattered. Increasing. Ponds and canals.

First record: M. McGhie, 1841, 'Lilleshall Pond.'



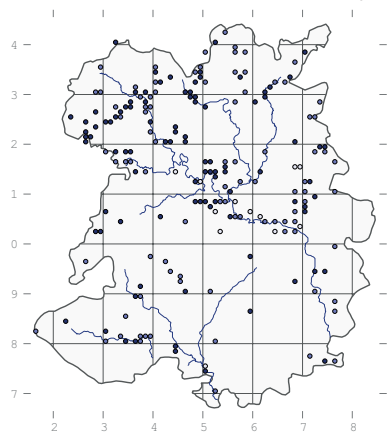
Planted and often thriving in several ponds and canals throughout, including one at Copthorne Mere, Merrington Green, in the Montgomery Canal at Llanymynech (first recorded by R.V. Lansdown in 1997), Preston Montford, the Shrewsbury Canal and a pond at Walkmill Marsh.

### *Elodea canadensis* Michaux Canadian Waterweed

Neophyte. Local. Stable. Rivers, lakes, ponds, canals.

First record: J. Randall, 1863, 'has found its way as high up [the Severn] as Shrewsbury.'

In a variety of aquatic communities, including A3 *Spirodela polyrhiza* in the Newport Canal (Trueman, 1981), A8 *Nuphar lutea* at Betton Pool (M.J. Wigginton, 1979) and S24 *Calamagrostis canescens* fen around Fenemere. It is recorded in the Montgomery, Llangollen, Newport, Shrewsbury and Prees Branch Canals; in meres such as Cole Mere, Marton Pool, Chirbury, and the Mere at Ellesmere; and in several rivers including the Roden, Teme and Tern. There are no recent records of it in the Severn, though.

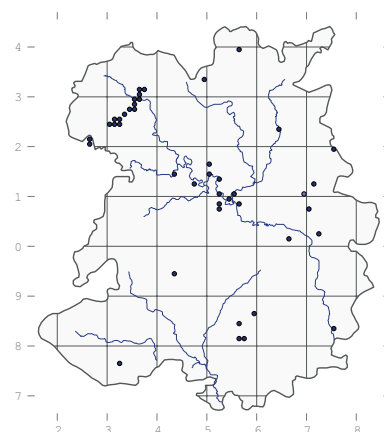


### *Elodea nuttallii* (Planchon) H. St John Nuttall's Water-weed

Neophyte. Scattered. Increasing. Canals, river and ponds.

First record: Perring, 1974, 'near Oakengates.'

Well known in the Montgomery Canal (where it was first recorded by C. Walker in 1986) and also found in the rivers Severn (C.D. Preston, 1987) and Tern (N.F. Stewart, 2005), but most common in lakes and ponds such as Berrington Pool, the Broad Ditch, Posenhall, the reservoir in New Pool Hollow and Pentre Hodre pond. On Brown Clee it is abundant in a pond close to the summit at 507 m (SO596866, 2012).



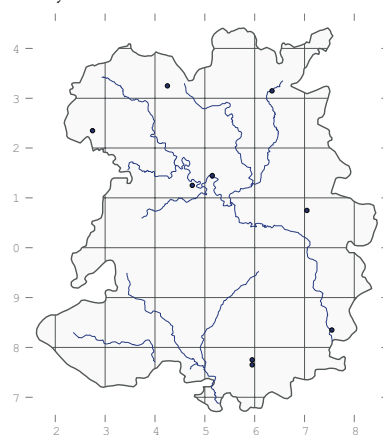
### *Lagarosiphon major* (Ridley) Moss

#### Curly Waterweed

Neophyte. Scarce. Increasing. Ponds.

First record: R.M. Stokes, 1995, 'in quantity in the small pond on Llynclys Hill.'

Established in a few places in the county, probably as a deliberate introduction or accidentally if an aquarium is emptied out into a pond. It is recorded at Copthorne Park, Highley-Alveley Country Park (R.A. Dawes, 2006), in a pond by the Hodnet Bypass (D.H. Wrench, 2007), in patches of water in the derelict Shrewsbury Canal (Stokes, 1996) and at Wood Lane Gravel Pit. In 1999 it was abundant in a pond in the Dhustone quarry on the summit of Titterstone Clee, at an altitude of 470 m. In most sites it seems quite persistent, but there is little evidence of it spreading to adjacent sites.



## Scheuchzeriaceae

### *Scheuchzeria palustris* L.

#### Rannoch-rush

Native. Last recorded in 1881. Bogs.

First record: C.C. Babington & W.A. Leighton, 1831, 'on the moss on the west side of Bomere Pool.'

Formerly at Bomere Pool and on the adjacent Shomere Moss, where it was first identified by Babington and

Leighton in 1831, although Leighton (1841) generously credited J. Jeudwine with its discovery because he had collected (but seemingly not identified) it in 1824. It was collected to extinction at Bomere, and was last seen in 1881 (R.M. Serjeantson, SHY).

In 1866 O.M. Feilden collected three specimens on Welshampton (Clarepool) Moss and the following year W.W. How and possibly W. Whitwell also collected it there, and there are no subsequent records. Finally, in 1884 W.E. Beckwith recorded it at the Mere at Ellesmere (Bennett 1898) but there is no confirmation of that finding.

## Juncaginaceae

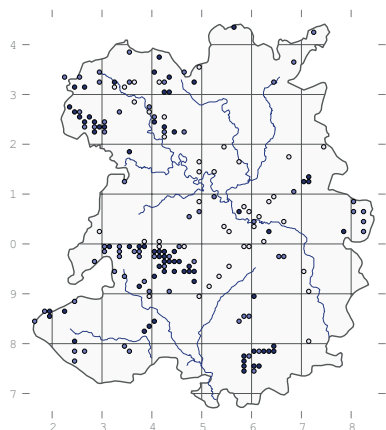
### *Triglochin palustris* L.

#### Marsh Arrowgrass

Native. Local. Decreasing. Axiophyte: flushes, fens, marshy grassland.

First record: Williams, c. 1800, 'sides of pools and boggy grounds, not uncommon. By the side of the water at Sundorn, Cound Moor, about Halston, etc.'

In short vegetation in flushes on the hills or in grazed grassland on the plain. Recorded in MG5 *Festuca rubra* grassland at Morton Pool (Trueman, 1981); MG8 *Caltha palustris* at Crose Mere; M10 *Carex dioica* in Shirlett Gutter (Trueman, 1980) and Trefonen Marshes; M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010) and Trefonen Marshes; M22 *Juncus subnodulosus* at Crose Mere, Morton Pool, Porth-y-waen (all Trueman, 1981), Sweeny Fen and Trefonen Marsh (Trueman, 1981); M23a *Juncus acutiflorus* on Stapeley Hill (Trueman, 1981); and in M35 *Montia fontana* on Caer Caradoc (Meade, 2010). It is declining in the lowlands from agricultural intensification and from lack of management on nature reserves, but upland populations seem stable.



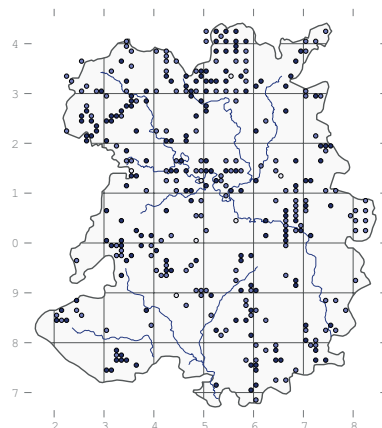
## Potamogetonaceae

### *Potamogeton natans* L.

#### Broad-leaved Pondweed

Native. Local. Stable. Ponds, ditches, canals, rivers.

First record: Williams, c. 1800, 'ponds, common.'



A perennial of still to slow-moving water, recorded in A2 *Lemna minor* community in pools at Brown Moss; S9 *Carex rostrata* at Wildmoor Pool (Trueman, 1981); S12 *Typha latifolia* in a field pond near Black Coppice and at Brown Moss; S14 *Sparganium erectum* at Castle Pools, Telford (Trueman, 1981); and S27 *Comarum palustre* at Brown Moss (Trueman, 1983).

It is most common in small, shallow ponds, and is now often introduced in gardens and conservation areas. It is also common in quarries (e.g. Dolgoch and Farley) where it has probably not been introduced, showing that it can be an effective coloniser. There are very few records for the meres: it was in Hencott Pool between 1836 (Leighton) and 1936 (F.R. Tennant), in Bomere Pool between 1951 (A.D. Skelding) and 1981 (B.R. Fowler), and it was found on the south shore of Cole Mere in 2007, but otherwise it only grows at Brown Moss, where it has been known since 1961 (Sinker).

Disused canals are ideal habitat for it. The first record was by D.A. Cadbury from the Whitchurch Canal in 1950, although J.P.M. Brenan collected it from 'Uffington' – probably the Shrewsbury Canal – in 1936. Since then it has been found in the Montgomery, Shrewsbury, Prees Branch and Newport canals. The only river it occurs in is the Roden, between Northwood and Ruewood.

In the hills it is mostly replaced by *P. polygonifolius*, but it does occur in ponds such as Wildmoor Pool on the Long Mynd, The Bog pool on

the Stiperstones and even in a small pool on the summit of Brown Clee at 535 m (SO59368650, 2004). Vegetation communities recorded for it include A2 *Lemna minor* community and S12 *Typha latifolia* swamp at Brown Moss.

### *Potamogeton polygonifolius* Pourr.

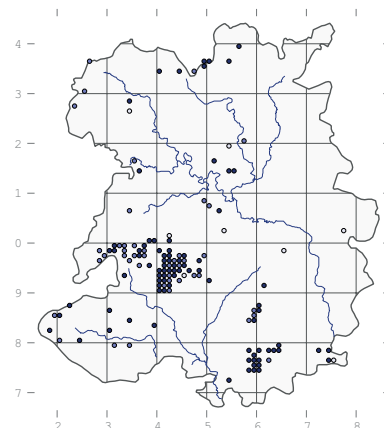
#### Bog Pondweed

Native. Local. Stable. Axiophyte: lowland mires and upland flushes.

First record (as *P. oblongus*): Leighton, 1836, Stiperstones Hill (det. J.E. Dandy, BM, MANCH).

Typical of wet heath and flushes more often than open water, and found in places such as M15 *Trichophorum germanicum* at Cramer Gutter (Sinker, 1979); M23a *Juncus acutiflorus* on Stapeley Hill (Trueman, 1981) and the Stiperstones; M29 *Potamogeton polygonifolius* in Callow Hollow (R. Tapper, 1983); and M35 *Montia fontana* at Boiling Well (Trueman, 1980). It also occurs in S9 *Carex rostrata* swamp in Wildmoor Pool (Tapper, 1983); S12 *Typha latifolia* at Snipe Bog and Battlefield Pool; and both S27 *Comarum palustre* and W1 *Salix cinerea* at Snipe Bog.

It is sensitive to shade, but it reappears in old sites when suitable conditions are restored, as at The Moors, Ellesmere in 1997, when council rangers cleared the scrub and dug scrapes as habitat for dragonflies; the only previous record having been by W.E. Beckwith in 1884.



### *Potamogeton coloratus* Hornem.

#### Fen Pondweed

Native. Rare. Last recorded in 1882. Meres.

Collected (as *P. plantagineus*) by W.E. Beckwith and R.M. Serjeantson from ditches near Crose Mere and the Mere in 1882 (det. Dandy & Taylor, BM,



SHY), but it has not been recorded in the county since then. It grows in ditches containing base-rich water over a peaty substrate, and may have been flourishing at that time as a result of drainage operations in the formerly extensive mires adjacent to those meres.

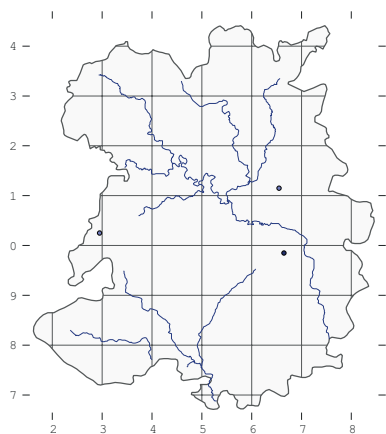
### *Potamogeton lucens* L.

#### Shining Pondweed

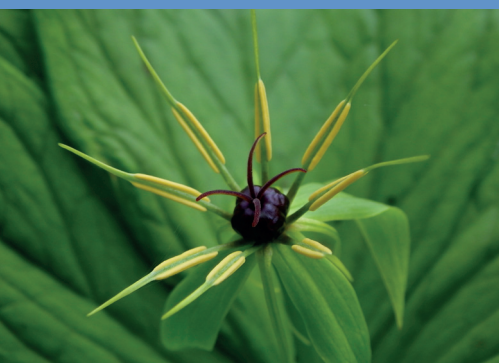
Native. Rare. Stable. Lakes and canals.

First record: Williams, c. 1800, 'ponds.'

The only current site is at Willey Ponds (SO6698), where it was found by D.H. Wrench in 2014. Previously it has been recorded at Oakly Park (H. Spare, 1841), Bomere Pool (G.H. Griffiths, 1870), Marton Pool, Chirbury (E.B. Benson, 1898 – M.J. Wigginton, 1979) and a canal reservoir in Wellington (F.R. Tennant, <1955, CGE).



*Colchicum autumnale* at Foxholes



*Paris quadrifolia* (Dan Wrench)

### *Potamogeton × angustifolius*

J. Presl (*P. gramineus* × *lucens*)

#### Long-leaved Pondweed

Native. Rare. Last recorded in 1892. Meres.

First record: (probably Leighton) in Hb. W. Borrer, conf. J.E. Dandy, K, 1841, Crose Mere.

Known at Crose Mere until 1892 (E.F. Linton, conf. Dandy, BM) and found at Ellesmere in 1884 (W.E. Beckwith, det. Dandy, CGE) and Frankton (presumably in the Montgomery Canal at Frankton Locks) in 1885 (Beckwith, det. Dandy, BM).

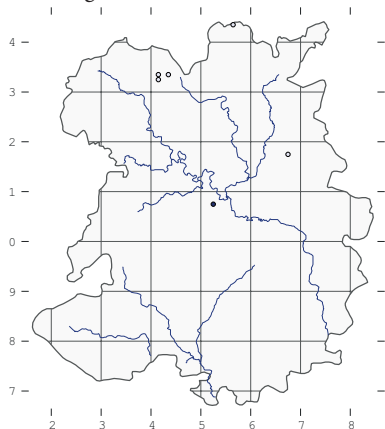
### *Potamogeton gramineus* L.

#### Various-leaved Pondweed

Native. Rare. Tenuous. Axiophyte: meres.

First records (as *P. heterophyllus*): Williams, c. 1800, 'Berrington pool; Whitemere and Blackmere near Ellesmere.'

Recorded in just five meres until the late 19<sup>th</sup> century, specifically Blake Mere and White Mere until 1885 (W.E. Beckwith, det. J.E. Dandy, BM), Berrington Pool until 1881 (Beckwith), Cole Mere in 1841 (A. Bloxam), and Oss Mere in 1883 (Beckwith). There is also an unconfirmed record for the Weald Moors by R. Anslow dating from 1865. In 2014 it reappeared at Berrington Pool following restoration work by Natural England, when it was spotted by S. O'Donnell. The plants may have come from buried seed and it is likely that the habitat has become more favourable following the tree clearance.



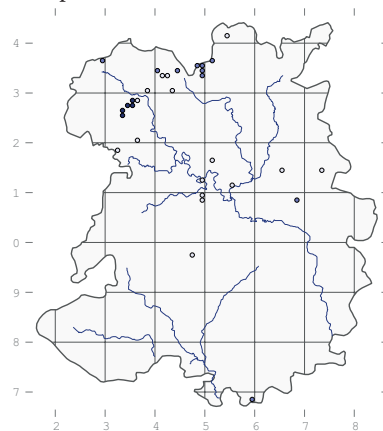
### *Potamogeton alpinus* Balb.

#### Red Pondweed

Native. Rare. Decreasing. Axiophyte: canals, ditches, ponds.

First record (as *P. fluitans*): Williams, c. 1800, 'Lilleshall Old Mill pool; pond on Hollyhurst Common near Longnor; ditches on the side of the road between Molverley and Oswestry; ditches about Hordley and Rednal Mill.'

The only current sites are associated with the Montgomery Canal, in the main channel close to the Rednal Basin (2012) and in the reserve adjacent to the Montgomery Canal near Aston Locks, where it was first recorded by J. Alder in 1985, and it was still present in 2012, but it is now very rare and it is clearly on the verge of extinction. In the past there were quite a few sites for it in places like the Weald Moors (Leighton, 1838, det. J.E. Dandy, E, SHY), Crose Mere (R.M. Serjeantson, 1882, det. C.D. Preston, SHY) and throughout the canal network. Williams's record for Lilleshall mill pond is the first British record of this species.



[*Potamogeton × griffithii* A. Benn. (*alpinus* × *praelongus*)

Sinker recorded this hybrid on the Prees Branch Canal (SJ4934) in 1967, but it is not widely accepted because there is no voucher specimen; best considered unconfirmed.]

### *Potamogeton praelongus*

Wulfen

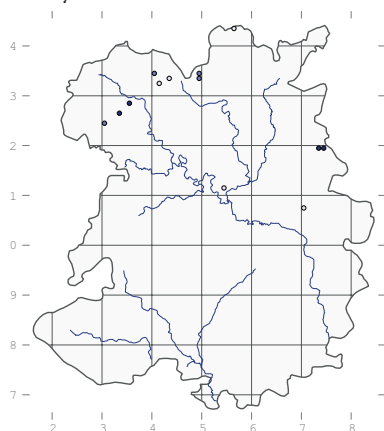
#### Long-stalked Pondweed

Native. Rare. Decreasing. Axiophyte: lakes, canals.

First record: W.E. Beckwith, 1880, 'floating in the canal near Ellesmere. It probably came from Whitemere Mere, as I have never been able to find it growing in the canal in that neighbourhood.'

Typically in deep, clear water, as in White Mere in 1882, when Beckwith described it as 'abundant in deep places' (BM, MANCH), but the only other mere it has been recorded in is Oss Mere (Anon, 1883, NMW), which is shallow. Otherwise it has generally been found only in canals such as the Shrewsbury at Berwick Wharf (R.M. Serjeantson, 1881, BM, SHY), the Llangollen at Cole Mere (W. Beacall, 1891) and the Prees Branch (Sinker, 1966). It persisted in the Montgomery Canal in a couple of places fairly recently (R.H. Dave, 1986) and the Newport Canal until 1995,

but in the latter site it was probably introduced when the canal was restored in the 1970s, together with many exotic species. It is probably extinct in the county now.



[*Potamogeton* × *undulatus* Wolfg. (*crispus* × *praelongus*)

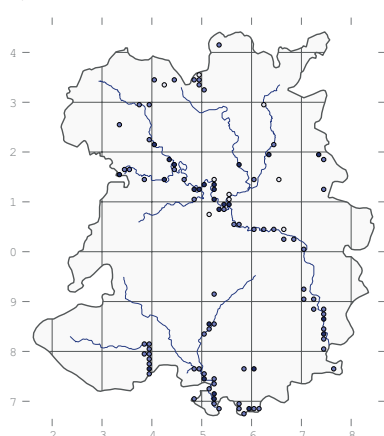
Recorded by W.E. Beckwith at the Mere, in 1884 (det. A. Bennett, *Journal of Botany*, 1894) (*Record of Bare Facts* 4, 1895) but the record is not supported by a voucher specimen and it should be considered unconfirmed.]

### *Potamogeton perfoliatus* L. Perfoliate Pondweed

Native. Local. Decreasing. Axiophyte: rivers, canals

First record (as *P. perfoliatum*): Williams, c. 1800, 'rivers and ponds.'

Occasional in most of the lowland rivers, including the Cound Brook (P. Parker, 1984), Ledwych Brook (N.T.H. Holmes, 1980), Pye Brook (M.B. Fuller, 1984), Clun (first recorded by J.M. Roper, 1981), Corve (first by D.M. Cadbury, 1966), Perry (first by E.D. Pugh, 1981), Roden, Severn (firstly by Leighton, 1835), Teme (first by H. Spare, 1841) and Tern (first by E.B. Benson, 1898).



### *Potamogeton* × *cooperi* (Fryer) Fryer (*perfoliatus* × *crispus*)

#### Cooper's Pondweed

This rare hybrid was collected by W.L. Scott in the Shrewsbury Canal at Upton Magna in 1878 (det. J.E. Dandy, BM) and by W.E. Beckwith at Berrington Pool (conf. C.D. Preston, SHY) in 1880 and the Mere at Ellesmere (conf. Dandy, BM) in 1882.

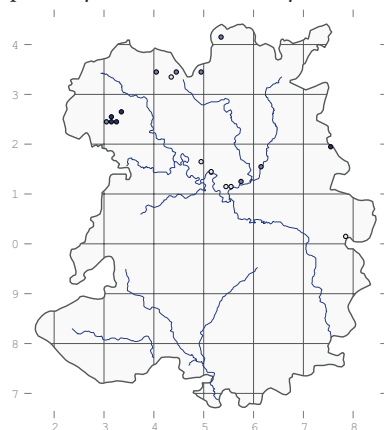
### *Potamogeton friesii* Rupr. Flat-stalked Pondweed

Native. Rare. Decreasing. Axiophyte: base-rich lakes and canals.

First record: J.E. Bowman, 1831, 'Colemere Mere' (det. Dandy, MANCH).

The only recent records are for the Montgomery Canal at Queen's Head, where it was last seen in 2002 (SJ339267, BIRM), and the Newport Canal, where it first turned up in 2013 (SJ750198, T. Holland, conf. N.T.H. Holmes). Some anglers on the Newport Canal take pride in their introductions of pond plants, which might account for its recent appearance there.

In the distant past it was present in some of the meres, having been recorded at Hencott Pool (Bowman, 1835, MANCH) and Snowdon Pool (H. Bidwell, 1838, OXF) as well as Cole Mere, but most of the records since then are from canals, in which it was first recorded in Shrewsbury Canal in 1836 (Leighton, MANCH). It is probably extinct in the county now.



[*Potamogeton* × *lintonii* Fryer (*crispus* × *friesii*), Linton's Pondweed

Recorded on the Montgomery Canal at Maesbury Marsh by J. Alder in 1985 (Briggs 1988) but, without a specimen, it is best considered unconfirmed.]

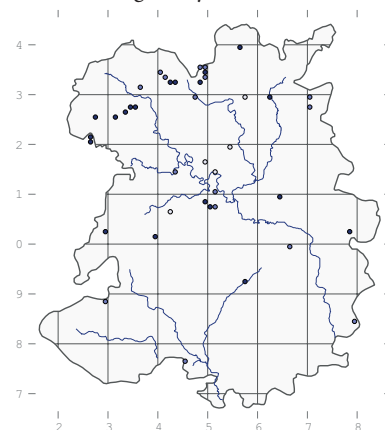
### *Potamogeton obtusifolius* Mert. & Koch

#### Blunt-leaved Pondweed

Native. Scattered. Stable. Axiophyte: meres, canals, pools.

First records (as *P. oblongus*): J.E. Bowman, <1841, K, 'Ellesmere' and Leighton, Shawbury Moss.

Occasional in pools, in A2b *Lemna trisulca* community at Brown Moss; A8b *Zannichellia palustris* at Betton Pool (M.J. Wigginton, 1979) and S13 *Typha angustifolia* at Bomere Pool. It was also well known in the Montgomery (W. Phillips, 1892 – R.V. Lansdown, 1998), Prees Branch (Sinker, 1966 – P. Parker, 1993) and Llangollen (V. Gordon, 1955 – C.G.A. Paskell, 1976) canals, but it seems to have gone from them now apart from a very robust population in Rednal Basin off the Montgomery Canal (2012).



### *Potamogeton pusillus* L. Lesser Pondweed

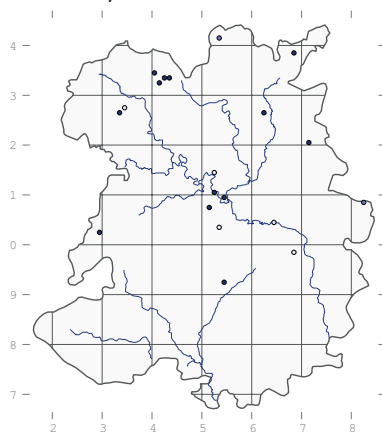
Native. Scattered. Stable. Lakes, ponds, rivers and canals.

First records: Williams, c. 1800, 'in the brook above Mr Otley's house at Pitchford; ditches between Woodhouse and the Queen's Head turnpike.'

It is difficult to distinguish *P. pusillus* from *P. berchtoldii*, so early records such as Williams's should be treated with some degree of caution. The first confirmed one is by H. Moseley at Buildwas in about 1850 (conf. J.E. Dandy, BM).

It occurs in ponds such as a field pond near Black Coppice, where it grows in S12 *Typha latifolia* swamp. It is also found in canals such as the Montgomery Canal at Aston Locks and, formerly, the old Whitchurch Canal (D.A. Cadbury, 1950, conf. Dandy, BM), as well as meres such as Betton Pool (C. Walker, 1989), the Mere, Ellesmere (C.D. Preston, 1998); and White Mere (Perring, 1993). A

good place to look for it is at Cole Mere, where it often grows in the shallows by Yell Meadow.



### *Potamogeton berchtoldii*

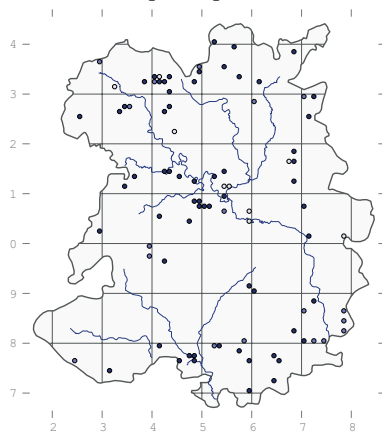
Fieber

#### Small Pondweed

Native. Scattered. Stable. Ponds.

First record: G. Lloyd, 1831, Snowdon Pool marshes (det. J.E. Dandy, K).

Occasional in ponds, canals and meres. It has been recorded so far in A2b *Lemna trisulca* community in a pool at Brown Moss and S13 *Typha angustifolia* at Bomere Pool, but it is probably present in a variety of other meso- to eutrophic aquatic habitats.



### *Potamogeton compressus* L.

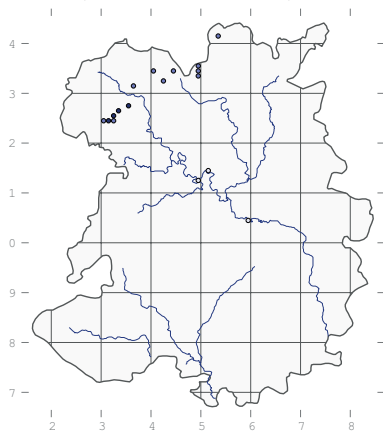
#### Grassrack Pondweed

Native. Rare. Last recorded in 2003. Axiophyte: rivers and canals.

First record: in Hb. W. Borrer (probably coll. W.A. Leighton) c. 1841, 'Shrewsbury' (det. J.E. Dandy, TDC)

Originally a plant of rivers, found in the Severn at Shrewsbury, Cressage (W.E. Beckwith, 1884) and Monkmoor (Hamilton, 1897). Since then it has only been recorded in canals, firstly in the Llangollen at Ellesmere (E. Vachell, 1927) and subsequently in the Whitchurch (D.A. Cadbury, 1950), Montgomery (W.R.I. Cook, 1952) and Prees Branch (Sinkers, 1966). It

persisted in the Montgomery Canal until recently but was eliminated when the canal was restored to navigation in 2002, despite promises by British Waterways that this would not happen. Probably extinct in the county.

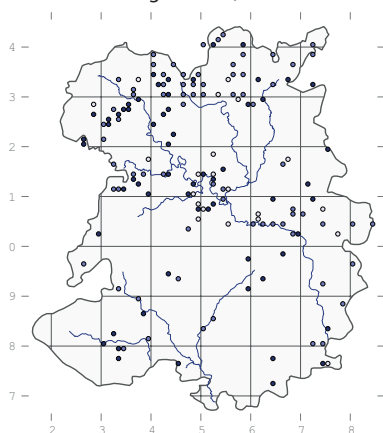


### *Potamogeton crispus* L.

#### Curled Pondweed

Native. Local. Stable. Ponds, ditches, canals and rivers.

First record: Williams, c. 1800, 'ponds, pools and slow-flowing streams, common.'



In still or slow-flowing water such as A8 *Nuphar lutea* community in Betton Pool (M.J. Wigginton, 1979) and other meres such as Cole Mere (Wigginton, 1979), Crose Mere (Sinkers, 1960), Fenemere (W. Phillips, 1885 – A.D. Skelding, 1951), and Marton Pool, Chirbury (E.B. Benson, 1898 – C. Walker, 1994). It has also been found in the Coalport, Llangollen (E.D. Pugh, 1981), Montgomery, Whitchurch (Anon, 1954, LDS), Prees Branch (C.G.A. Paskell, 1978 – A. Whitbread, 1984) and Shrewsbury (R.M. Serjeantson, 1881– R.D. Benson, 1893) canals.

It is less often found in rivers, but there are recent records for the Perry at Rednal Mill (C.D. Preston, 1991), the Bailey Brook at Aychley and the Severn at Monkmoor. Elsewhere, it turns up in ponds throughout the county. Recent examples include a shady woodland

pond in Oxenbold Coppice and Upper Pool, Stead Vallets (P.R. Green, 2010).

### *Potamogeton pectinatus* L.

#### Fennel Pondweed

Native. Local. Increasing. Canals, meres, ponds and rivers.

First records: Williams, c. 1800, 'Shrewsbury Canal near Uffington; Lilleshall Canal near Lilleshall Abbey.'

Early records of this species were mostly from canals. Leighton, for example, found it only in the Shrewsbury Canal, in 1832, where it was abundant. It was later found in ditches in the Weald Moors by R. Anslow in 1865 and W.E. Beckwith in 1880 (again, 'abundant') and in pools near Smethcott and Wroxeter (both Beckwith, 1880) and the lake at Hawkstone Park (Beckwith, 1882). It is likely that it moved into water bodies as they became more eutrophic as a result of agricultural intensification.

It was not found in any meres until 1898, when it was found in Marton Pool, Chirbury, by R.D. Benson and it was first recorded in the Mere at Ellesmere, by M.L. Wedgwood in 1917. It now occurs in Cole Mere, Crose Mere, Fenemere, Marton Pool, the Mere and White Mere. Since then it has been found in rivers (first recorded in the Tern at Attingham Park by Perring in 1972) and it is now common in the Perry, Roden, Severn, Tern and it has been found occasionally in several other lowland rivers. It sometimes grows in places with few other associates: there are no samples of its vegetation, but in the rivers it is typically in A11 *Myriophyllum spicatum* and in canals and lakes is more likely to be in A12 *P. pectinatus* community.

[*Groenlandia densa* (L.) Fourr. Opposite-leaved Pondweed

Although Williams was generally reliable, his record (ca. 1800) of *Potamogeton densum* 'in ditches' should perhaps be treated with some caution. The only other record of it in the county was by G.H. Griffiths, who listed it for Longnor & Marshbrook in about 1870; but these are very dubious.]



***Zannichellia palustris* L.****Horned Pondweed**

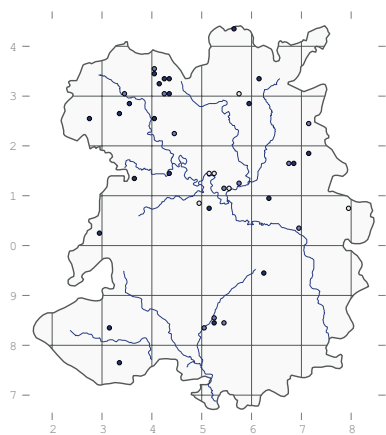
Native. Scattered. Increasing.

Axiophyte: canals, ponds, lakes and rivers.

First record: Williams, c. 1800, 'Shrewsbury Canal near Uffington.'

Well known in several of the meres, including Betton Pool, where it was first recorded by M.J. Wigginton in 1979, Cole Mere (Sinker, 1963), Crose Mere (Sinker, 1960), Marton Pool, Chirbury (C. Walker, 1990), Oss Mere (Wigginton, 1979), the Mere at Ellesmere (J.E. Bowman, 1841) and White Mere (Wigginton, 1979). It was also once found at Bomere Pool by W. Phillips in 1978 and once at Fenemere by Sinker in 1965.

It grew in the Shrewsbury Canal until 1965 (Sinker) and has recently turned up in the Montgomery Canal (R.V. Lansdown, 1997). It is much less common in rivers, but there are recent records of it in the Bromley Brook at Bromley (SJ405252, P. Parker, 1992), the Bailey Brook at Aychley (SJ610337, 1997) and in the stream at Sweeny Fen (2000). Elsewhere, it has been recorded in ditches and ponds throughout, but rarely more than once in any site. Recent records include a reservoir on Kynnersley Moor, a fishing pond at Edgmond and a pool at Kenstone.

**Nartheciaceae*****Narthecium ossifragum* (L.)**

Hudson

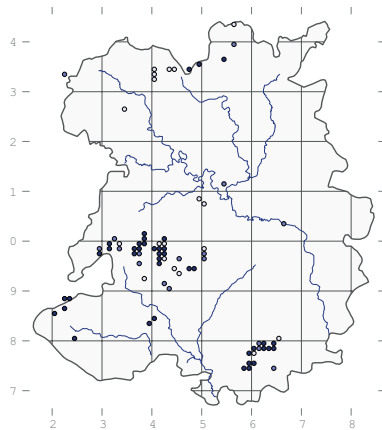
**Bog Asphodel**

Native. Local. Decreasing. Axiophyte: bogs and flushes.

First record: L. Brown, 1726, 'on ye side of Longment.'

Occasional in mires such as M2 *S. fallax* lawns on Wem Moss, M6 *Carex echinata* on the Stiperstones and Stapeley Hill (both Trueman, 1981), M15 *Trichophorum germanicum* at

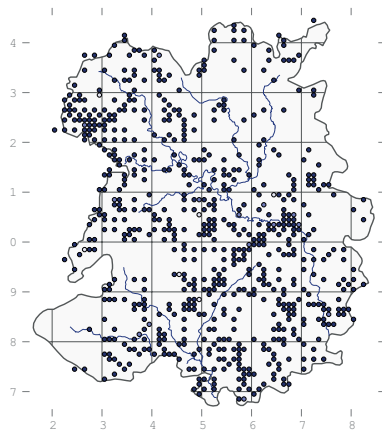
Cramer Gutter, and, formerly, in M25 *Molinia caerulea* at Steel Heath. It has also been found in M23a *Juncus acutiflorus* on the Stiperstones. It has declined dramatically in the lowlands, and may now be present only on Wem Moss and Whixall Moss. In the hills it is still quite widespread, especially around Titterstone Clee and the Long Mynd.

**Dioscoreaceae*****Tamus communis* L.****Black Bryony**

Native. Widespread. Stable. Hedges,

First record: Williams, c. 1800, 'hedges, common.'

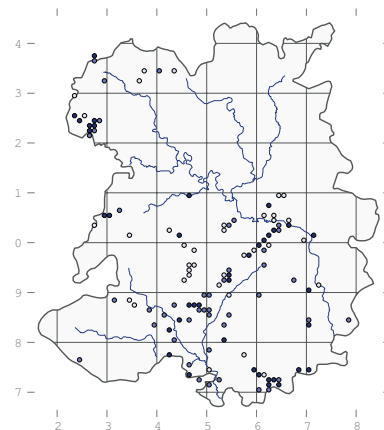
Frequent in hedges throughout the lowlands, but more so on the more base-rich soils. Its habitat is woodland edge, hedgerows and the unmown and ungrazed edges of grassland. It is recorded in CG3 *Bromopsis erecta* on rock outcrops at Ballstone Quarry; MG1 *Arrhenatherum elatius* on hedgebanks at the Speller and Roman Bank; W6 *Salix × fragilis* at White Mere; and in W8 *Fraxinus excelsior* at Blakeway Coppice, Craig Sychtyn, Limekiln Wood, Stevenshill and elsewhere. Lowland: up to about 240 m at Hill Houses (SO633788, Trueman, 1998).

**Melantheaceae*****Paris quadrifolia* L.****Herb Paris**

Native. Local. Stable. Axiophyte: woods.

First records: Williams, c. 1800, 'in a field adjoining the upper end of Pitchford Pool Tail Coppice; by the side of the coppice, and near the brook or rill. In a copse upon the Vall Hill opposite Mr Kynaston's house at Hardwick.'

Entirely restricted to W8 *Fraxinus excelsior* woodland in places like Chorley Covert, Harton Hollow, Knowle Wood, the Bog at Wilderhope and Whitwell Coppice. Good places to look for it include Llynclys Hill and Blakeway Coppice. It often occurs in slightly damper parts of the wood and sometimes in very wet places such as in flushes in Redhill Coppice.

**Alstromeriaceae*****Alstroemeria aurea* Graham****Peruvian Lily**

Established in grassland near the Mere at Ellesmere (SJ409342, 1998, BIRM) and at Merrington Green (R.M. Stokes, 1998) – still there in 2008 (M.S. Duffell).

**Colchicaceae*****Colchicum autumnale* L.****Meadow Saffron**

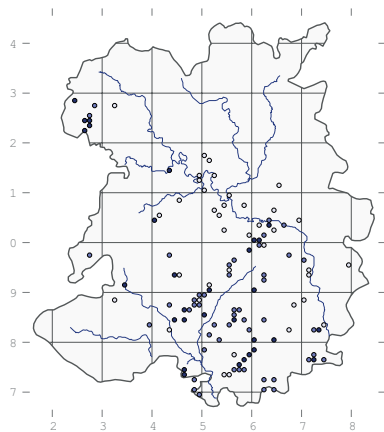
Native. Local. Decreasing. Axiophyte: grassland, woodland.

First record: L. Brown, 1726, 'plentiful in Corvedale.'

Once a common weed in MG5 *Festuca rubra* meadows on the more base-rich soils throughout the county, but now restricted to a small number of meadows in conservation management, such as Derrington Meadow (A. Hillman, 1992) and Horseditch (D.H. Wrench, 1994), and

## Vascular plants

ungrazed strips of grassland along roadsides, as at Farlow Common. It is more common in scrub and secondary W8 *Fraxinus excelsior* woodland, as at Earl's Hill and Preston Rough. Generally lowland, but up to 425 m at Horseditch (SO59347728, Wrench, 1994).



## Liliaceae

### *Gagea lutea* (L.) Ker Gawl. Yellow Star-of-Bethlehem

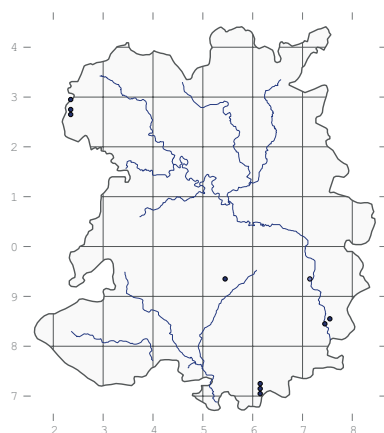
Native. Scarce. Decreasing. Axiphyte: calcareous woodland.

First record: C.W. Mackay, 1883, 'Alveley, Bridgnorth' (SHY).

Entirely restricted to W8 *Fraxinus excelsior* woodland in a few scattered sites around the county. In the south-east it occurs by the Severn and by various brooks in damp woodland, often growing on the very edge of the stream where the bulbs are sometimes washed downstream in floods. It occurs in several places by the Corn Brook near Boraston and Whatmore, where it was first recorded by C.M. Dony in 1967, and as far upstream as Tilsope (M. Jannink, 2008). In Withalls Wood, by the Severn, there is a small population that was first recorded by R.G. Kemp in 1981. There were some 30 plants at that time, but the population has declined recently, especially when a long-distance cycle path was put through the middle of it. Nearby, but on the other side of the river, there are populations in Lyebatch and Lakehouse Dingle (Jannink, 2005). In 1910 Frances Pitt claimed a first county record for a place she described simply as 'near Bridgnorth', which may have been this site. Otherwise the discoverer was A. Whitehouse, who showed a site 'north-east of the river at Hampton Load' to J.B. Duncan in 1912.

The habitat in the north-west of the county is quite different, being on limestone outcrops and having no

association with water. They are, however, still W8 woods or grassland that was clearly woodland until recently. It was first recorded at Craigllwyn by E.D. Pugh in 1979 and it has now been found in eight populations in close proximity. In total there are thousands of plants, but some of the sites are vulnerable to grazing. None of its sites in the county are nature reserves. Most of the populations have declined in recent years and all are vulnerable to agricultural intensification.



### *Erythronium dens-canis* L. Dog's-tooth-violet

Neophyte. Rare.

Established along an old path through woodland in Badger Dingle (E. O'Donnell, 1995).

### *Tulipa sylvestris* L. Wild Tulip

'Near Hopton Castle' (M. McGhie, 1841).

### *Tulipa gesneriana* L. Garden Tulip

A garden throw-out in Nantmawr Quarry and on a roadside in Beckbury.

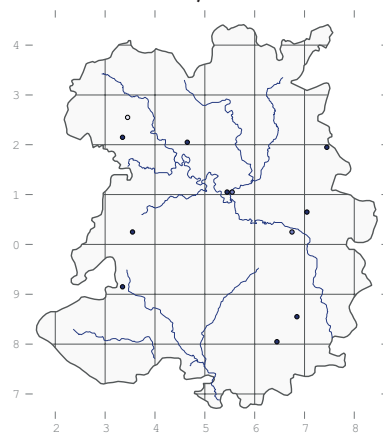
### *Fritillaria meleagris* L. Fritillary

Native. Scattered. Casual. Gardens.

First record: Leighton, 1841, 'naturalised by J.F.M. Dovaston, Esq. In the fields near Westfelton.'

Planted in a variety of sites around the county, where it never persists. There are recent records of it at Merrington Green, Attingham Park, alongside the Newport Canal in Newport (E. Howell, 2006), Lydham Churchyard (D.H. Wrench, 2006), on a road verge at Farlow (M. Cousins, 2007) and in Stirchley Dingle (A. Connah, 2008). There are no records of it in flood

meadows and it is not considered native in this county.



### *Lilium martagon* L. Martagon Lily

Neophyte. Scattered. Casual. Gardens.

First record: J.C. Melvill, 1905, 'Meole Brace Hall.'

Barely naturalised outside gardens, where it has been either deliberately planted or dumped with garden waste. Some stands contain many plants, but they do not spread into the wild. There are recent records of it in the churchyard at Middleton-in-Chirbury (J.A. Thompson, 1999, but known here since 1976 (J.A. Roper)), by ruins in Sheinton, and on Llyncllys Hill.

### *Lilium pyrenaicum* Gouan Pyrenean Lily

Neophyte. Rare. Casual. Gardens.

First record: H.F. Pendlebury, 1954, 'Blodwel Rock, well established in the wild state well away from any existing gardens.'

Still present on Blodwel Rocks (J. Pedlow, 2000) and well established in Snailbeach Coppice (SJ3702, 2008). There are also recent records of it as planted in the churchyards at Ratlinghope (J.A. Thompson, 1998), Middleton-in-Chirbury (Thompson, 1999) and Trefonen (R.A. Dawes, 1999).

## Orchidaceae

### *Cephalanthera damasonium* (Mill.) Druce

#### White Helleborine

Reported on Wenlock Edge, 'one plant only, on summit between Eaton and Westhope' by S.E. Chandler in 1940 and in Blakeway Coppice (SO599989 & 601994) by M.B. Fuller in 1974 but not seen there again despite several visits.

***Cephalanthera longifolia***

(L.) Fritsch

**Narrow-leaved Helleborine**

Native. Rare. Last recorded in 1891. Woods.

Although this species occurs in the Worcestershire parts of the Wyre Forest, there are no records of it in the Shropshire parts since 1841 (J.E. Bowman, SHY & E. Lees). Leighton also gives a record by H. Bidwell for a plantation near Ruckley. Since then the only records are for a site near Craven Arms or Stokesay (possibly Stoke Wood) between 1887 and 1890 (J.D. LaTouche, SHY).

***Epipactis palustris* (L.)**

Crantz.

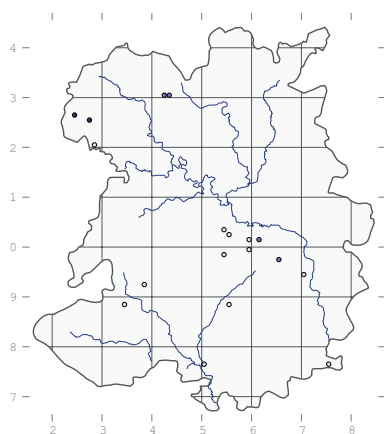
**Marsh Helleborine**

Native. Rare. Decreasing. Axiophyte: fens.

First record: Littleton Brown, 1731, Oakeley Wood.

Currently just two sites: Sweeny Fen, where it is quite abundant, thanks to careful management by the Wildlife Trust wardens, and Trefonen Marshes, where there were just six plants in 2003 (R.A. Dawes) and it has not been recorded since.

It occurs in M22 *Juncus subnodulosus* fen at Sweeny Fen and, formerly, at Crose Mere, and it was recorded in M10 *Carex dioica* at Shirlett Gutter (Trueman, 1980).

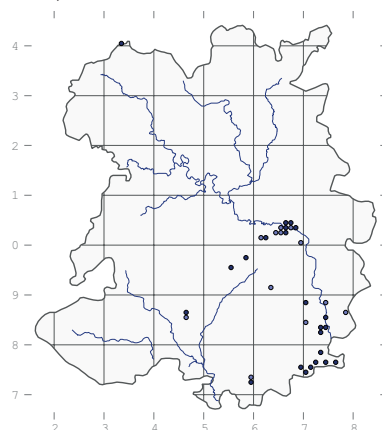
***Epipactis purpurata* Smith****Violet Helleborine**

Native. Local. Increasing. Axiophyte: woods.

First record: B.R. Fowler, 1964, Chorley Covert.

In W8 *Fraxinus excelsior* woods in places like Benthall Edge (where it was first recorded by P. Benthall in 1967), Blakeway Coppice (A. Ashwell, 1978),

Dale Coppice (R.M. Stokes, 1995) and Highley-Alveley Country Park (D.H. Wrench, 2004). It appears to be increasing, having turned up in places like the Wyre Forest (J. Bingham, 1991) and Flannog Wood (H. Hampson, 1987) since Sinker's Flora.

***Epipactis helleborine* (L.)**

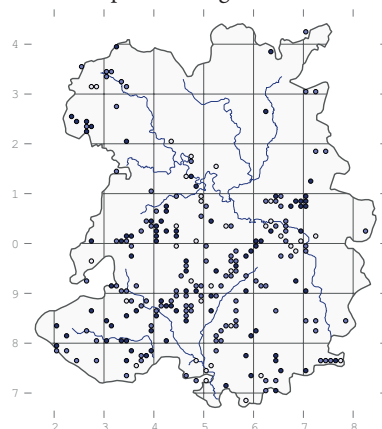
Crantz

**Broad-leaved Helleborine**

Native. Local. Decreasing. Axiophyte: woods and grassland.

First record (as *Serapias latifolia*): Williams, c. 1800, 'dry woods and thickets, not uncommon. In Bomere Wood, Golden Covert, Halston Woods, etc. Wood at Sundorn'.

In a variety of woodland types such as W8 *Fraxinus excelsior* at Benthall Edge and Blakeway Coppice, to less calcareous woods such as at Shelton Rough, where it occurs in W6 *Salix × fragilis* by the Severn. It is also found in grassland in places like Cow Hall Farm (D.M. Young, 2003). In 1944 Miss G. Lloyd wrote: 'the lawns here [Leaton Knolls] have been mown for something like a hundred years. This year, for the first time, they have not been touched. A very fine *Epipactis latifolia* has appeared right at the edge of one lawn... within six feet of the house' (*Transactions* 1949). It is sometimes found on spoil heaps, as at Dawley (SJ6907, P.S. Gateley, 2007) but is more often an indicator of ancient woods or species-rich grassland.

***Epipactis leptochila***

(Godfrey) Godfrey

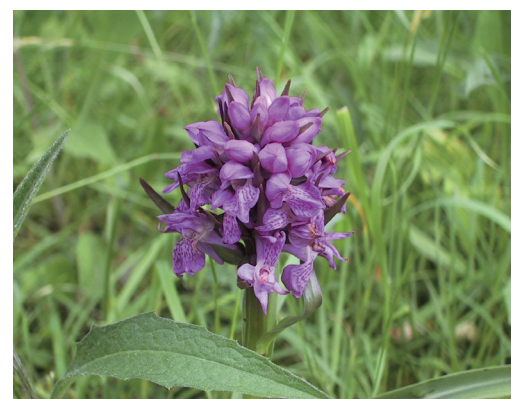
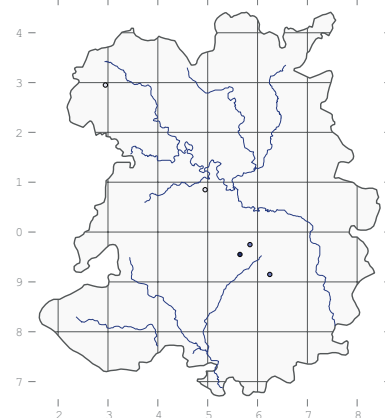
**Narrow-lipped Helleborine**

Native. Rare. Casual. Woods.

First record (as *E. viridiflora*): C.C. Babington & Leighton, 1832, 'wood on the west side of Bomere Pool'.

There is only recent site, at Blakeway Coppice (SO583975, A. Ashwell, 1978, conf. J.T.H. Knight) where it persisted until at least 1993 (Ashwell) but seems now to have gone. The site is a W8 *Fraxinus excelsior* wood.

It has also been recorded at Oswestry (Leighton, 1841) and Lower Netchwood (SO6291, D. Stoves, 1972).



*Dactylorhiza incarnata* at Granville Country Park



*Iris pseudacorus* (Dan Wrench)



***Epipactis dunensis*** (T. & T.A.Stephenson) Godfrey

**Dune Helleborine**

Native. Rare. Casual. Woods and gardens.

Recorded at Blakeway Coppice (SO583975, A. Ashwell, 1978, conf. J.T.H. Knight), but not persisting, and more recently found in a garden border outside Malinslee House in Telford (SJ696087, E. O'Donnell, 2005), where it was probably introduced with bark chippings from a coastal site. The Blakeway Coppice site is a W8 *Fraxinus excelsior* wood.

***Epipactis phyllanthos*** G.E. Sm.

**Green-flowered Helleborine**

Native. Rare. Last seen in 1998. Axiophyte: woods.

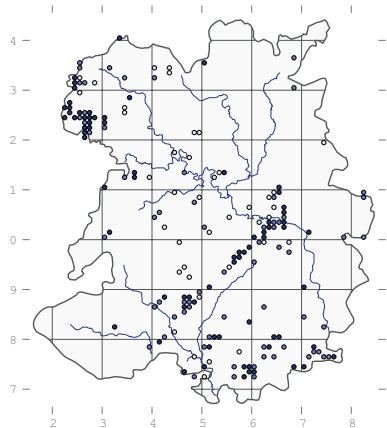
The only site is Benthall Edge Wood, where it used to occur in small numbers along the edges of tracks in W8 *Fraxinus excelsior* woodland in a couple of places. It was first recorded by P. Benthall (conf. D.P. Young) in 1963 and it has since been recorded many times, but the last record dates from 1998 (SJ660032, R.M. Stokes) and that plant is known to have gone.

***Neottia ovata*** (L.) Bluff & Fingerh.

**Twayblade**

Native. Local. Stable. Axiophyte: woods, quarries and meadows.

First record (*Ophrys ovata*): Williams, c. 1800, 'moist woods and thickets. Long Dale, near Cound, etc.'



In calcareous woods and species-rich grassland, including CG2 *Avenula pubescens* in Pattens Rock Quarry (Trueman, 1981); CG3 *Bromopsis erecta* at Lilleshall Quarry; M22 *Juncus subnodulosus* at Porth-y-waen (Trueman, 1981); MG5 *Festuca rubra* at Ropewalk Meadow, Stocking Meadows (Trueman, 1981) and Llynclys Hill; and

W8 *Fraxinus excelsior* woodland at Llynclys Hill, the Novers and Wenlock Edge. A good place to see it is in Ropewalk Meadow in Ironbridge.

***Neottia cordata*** (L.) Rich.

**Lesser Twayblade**

Native. Rare. Last recorded in 1920. Moorland.

Shropshire is rather beyond the range of this northerly, upland species, but it apparently did survive in the county until the recent past. Littleton Brown recorded it on the Stiperstones in 1726, and Leighton found it still there in 1841. Diamond listed it for Craignant in 1891, but that does seem a rather dubious record. O.M. Feilden claimed to have found it at Welshampton in 1892, and he reported it again in 1920; but he never revealed the precise locality.

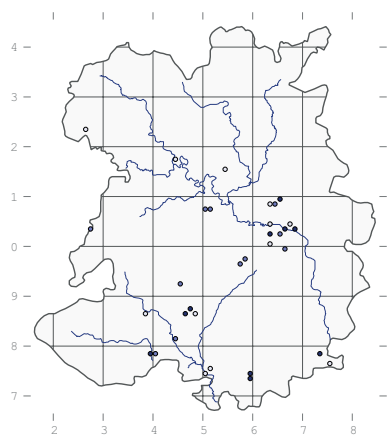
***Neottia nidus-avis*** (L.) Rich.

**Bird's-nest Orchid**

Native. Local. Stable. Axiophyte: woods.

First record (as *Ophrys nidus-avis*): Williams, c. 1800, 'woods under the Wrekin.'

Restricted to W8 *Fraxinus excelsior* woods in places such as Limekiln Wood, Tick Wood and the Novers. There are some old records for outlying sites such as Blodwel Rock (T. Salwey, 1841) and Beech Dingle (P.J.M. Nethercott, 1958) but is is now mostly found along Wenlock Edge and the south side of Titterstone Clee.



***Epipogium aphyllum*** Sw.

**Ghost Orchid**

Native. Rare. Last seen in 1892. Woods.

The only site for this rare orchid was found by Miss Lloyd and Miss Lewis in 1876, in a 'wood called Upper Evens, part of Bringewood Chase; definitely in Shropshire,' according to C.C. Babington (1881, CGE). It persisted until at least 1892 (G.C. Druce) but has not been seen since.

***Spiranthes spiralis*** (L.)

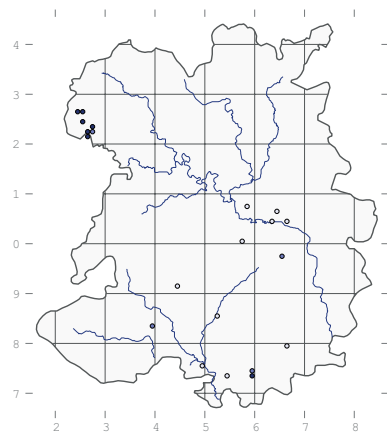
Chevall

**Autumn Lady's-tresses**

Native. Rare. Decreasing. Axiophyte: grassland.

First record: H. Moseley, c. 1837, Buildwas.

In species-rich limestone grassland such as CG2 *Avenula pubescens* at Pant (Trueman, 1981). There are recent records of it at Crickheath Hill (R.A. Dawes, 1987), Pant (H. Webster, 1990), Llanymynech Rocks (C. Chaffey, 1997) Nantmawr (R. Mileto, 1999), the Novers (J. Bingham, 1988), Trefflach (R.A. Dawes, 2003) and Trefonen Marshes.



***Platanthera chlorantha***

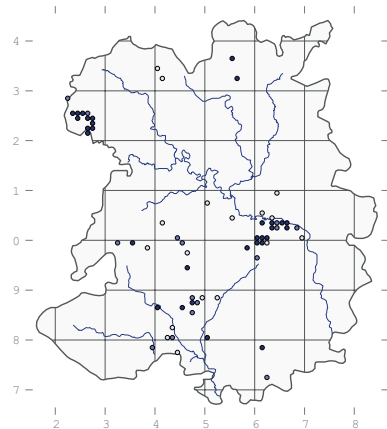
(Custer) Rchb.

**Greater Butterfly-orchid**

Native. Local. Decreasing. Axiophyte: grassland and woodland.

First record: H. Moseley, c. 1837, Buildwas.

In species-rich grassland such as MG5c *Danthonia decumbens* on Crickheath Hill (SJ273233, Packham, 1979) or open woodland such as W8 *Fraxinus excelsior* on Llynclys Hill (SJ274239, 2006). It is still reasonably common in places like Blakeway Coppice, Farley Dingle and Pennerley Meadows. A good place to look for it is on Llynclys Hill, where sporadic episodes of tree clearance seem to provide the perfect habitat for it.



***Platanthera × hybrida***  
Bruegger (*chlorantha × bifolia*)

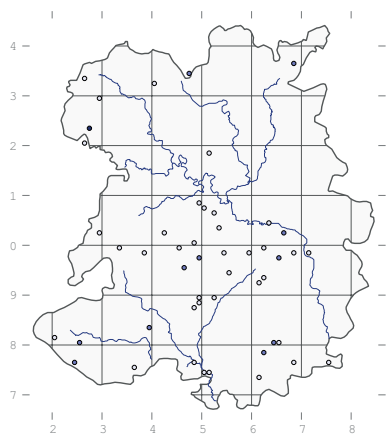
Recorded just once, on Llynclys Hill (SJ272237, 2007, Lockton & Whild, conf. R.M. Bateman & C.A. Stace) in MG5c *Danthonia decumbens* on the edge of a grassland clearing.

***Platanthera bifolia* (L.) Rich.**  
Lesser Butterfly-orchid

Native. Rare. Decreasing. Axiophyte: grassland.

First records (as *Orchis bifolia*): 'old pastures about Berrington, Pitchford, Lee near Ellesmere, and plentifully in pastures adjoining Netchwood; common at Monks Hopton.'

The only recent site for this species is on Llynclys Hill (SJ271236), where it occurs in MG5c *Danthonia decumbens* grassland. There are many old records of it, with comments such as 'abundant locally in grass fields' at Shirlett (W.B. Allen, 1921); 'locally abundant, moist pastures' at Eaton-under-Heywood (W.E. Thompson, 1904) and 'very common in many places near Ludlow and Bedston' (J. Babington, 1803).



***Pseudorchis albida* (L.) A. & D. Löve**

Small-white Orchid

Just two old records: at Benthall Edge (G. Lloyd, 1841) and Oretton (G. Jordan, 1856). A third record by G.H. Griffiths (c. 1870) at Hope Bowdler should be considered unconfirmed.

***Gymnadenia densiflora***  
(Wahlenb.) A. Dietr.

Marsh Fragrant-orchid

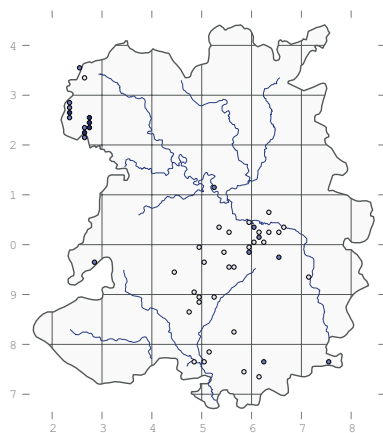
Native. Scarce. Decreasing. Axiophyte: wet meadows and abandoned quarries.

First records (as *Orchis conopsea*): Williams, c. 1800, 'boggy meadows between Pitchford and Golden, Golden and Cound Moor, between Longner Green and Lidley-Hayes.'

Locally abundant in M22 *Juncus subnodulosus* grassland at Sweeny

Fen, but now very rare elsewhere in the county. There are recent records of it at Craig Sychtyn (R.A. Dawes, 2000), Dolgoch Quarry (Dawes, 2004), Llanymynech Rocks (C. Chaffey, 1997) and Llynclys Hill. Most of the decline happened many years ago, but it was last recorded on Wenlock Edge in 1961 (Sinker) and in the Wyre Forest in 1979 (J. Bingham).

Some of the plants on Wenlock Edge may have been *Gymnadenia conopsea* (L.) R.Br., Chalk Fragrant-orchid, but this species has not yet been confirmed as occurring in Shropshire.



***Gymnadenia borealis***  
(Druce) R.M. Bateman, Pridgeon & M.W. Chase

Heath Fragrant-orchid

Recorded in MG5 *Festuca rubra* grassland at Bell Coppice Meadows (SO714753) in 1979 (M. Taylor) and 1998 (J. Bingham) and possibly at Lubberland (SO629779, A. Hearle, 1989).

***× Gymnaglossum jacksonii***  
(Quirk) Rolfe (*Gymnadenia conopsea × Coeloglossum viride*)

The *Record of Bare Facts* for 1923 reports that Mr R.F.L. Burton found this hybrid near Longner Hall in 1920, and collected it to grow on, but there is no subsequent information about it.

***× Dactylodenia st-quintinii***  
(Godfrey) J. Duvign. (*Dactylorhiza fuchsii × Gymnadenia conopsea*)

William Whitwell is reported as having collected *Orchis maculata × Habenaria conopsea* from a site near Oswestry (conf. E.F. Linton) (*Journal of Botany* 1902). The name *Orchis maculata* could apply equally to *Dactylorhiza fuchsii* or *D. maculata*, but the former is more common in that part of the county, so it seems reasonable to assume that the hybrid was *× Dactylodenia st-quintinii*. The precise location is not known.

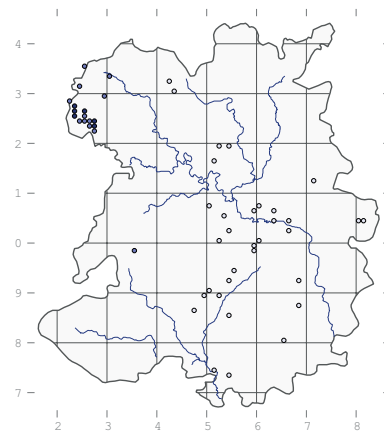
***Coeloglossum viride* (L.) Hartm.**

Frog Orchid

Native. Scarce. Decreasing. Axiophyte: grassland.

First records (as *Satyrion viride*): Williams, c. 1800, 'meadows about Eaton Mascott and Battlefield.'

In species-rich grassland such as CG2 *Avenula pubescens* in Craig-llwyn Quarry. There are currently just six known sites for it in the county. The biggest population is in a meadow at Pant (SJ278234) where there were 171 plants in 2003 (R.A. Dawes). It also grows at Craig Sychtyn (where it was first recorded by E.M. Rutter, 1959), Llynclys Hill (E.R. Lloyd, 1929) and Swan Hill (R.A. Dawes, 2010).

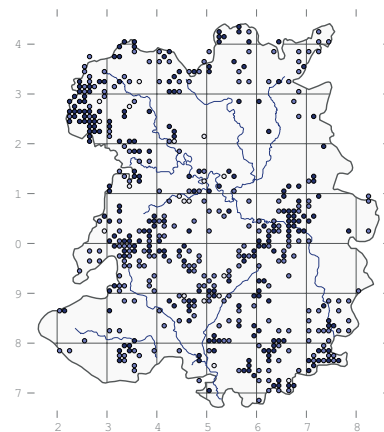


***Dactylorhiza fuchsii* (Druce) Soó**

Common Spotted-orchid

Native. Local. Decreasing. Grassland, quarries.

First record (as *Orchis maculata*): Williams, c. 1800, 'meadows and pastures.'



In a variety of grassland types, from almost bare ground in old quarries to woodland glades. It has been recorded in CG2 *Avenula pubescens* in Dolgoch Quarry; CG3 *Bromopsis erecta* in Lilleshall Quarry; MG1e *Centaurea nigra* on the verge of a track at Roman

## Vascular plants

Bank and around the edges of Ropewalk Meadow; MG5 *Festuca rubra* at Pudding Bag, Burnt House (D.H. Wrench, 1995) and elsewhere; MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981); M10 *Carex dioica* at Trefonen Marshes (Trueman, 1981); M22 *Juncus subnodulosus* at Sweeny Fen and Trefonen Marshes (Trueman, 1981); M23 *J. effusus* on Haughmond Hill; W7 *Lysimachia nemorum* at Brook Vessons; and W8 *Fraxinus excelsior* on Llyncllys Hill.

The variety *rhodochila* has been recorded at Benthall (SJ664024, S. Morgan, conf. I. Denholm, 2010).

### *Dactylorhiza* × *kernerorum* (Soó) Soó (*fuchsii* × *incarnata*)

Recorded at Muxton Marsh (SJ716135, J. Box, det. P.F. Hunt, 1986), Donnington (SJ704126, Box, det. Hunt, 1987) and at Waxhill Meadow at Granville Country Park (SJ718129, Whild & Lockton, 2004, conf. R.M. Bateman, BIRM).

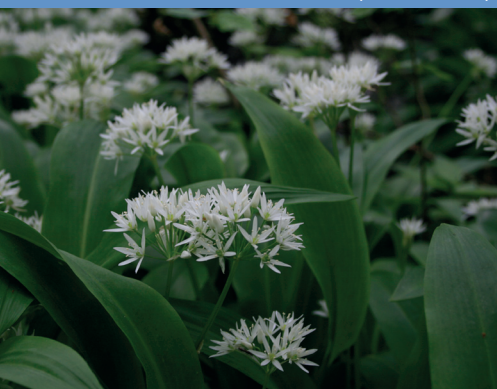
### *Dactylorhiza* × *grandis* (Druce) P.F. Hunt, (*fuchsii* × *praetermissa*)

#### Tall Marsh-orchid

Probably not uncommon, but as with many hybrids it is difficult to make definite records. Recorded from several

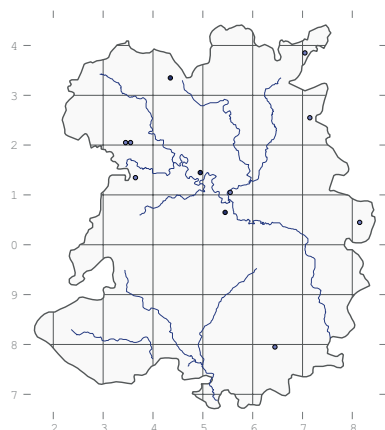


*Galanthus nivalis* 'Flora Pleno'  
(Dan Wrench)



*Allium ursinum* at Redhill

sites but not confirmed from any. Probably abundant at Cole Mere in Yell Meadow.



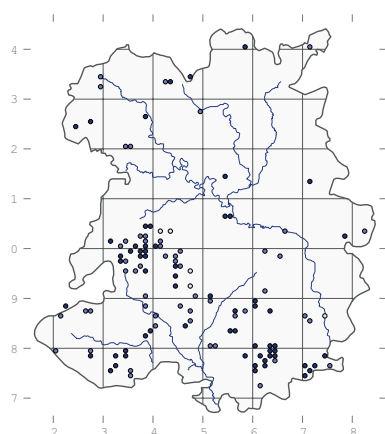
### *Dactylorhiza maculata* (L.) Soó

#### Heath Spotted-orchid

Native. Local. Decreasing. Axiophyte: grassland.

First record: R.D. Benson, 1892, 'bog under the Stiperstones' (SHYB).

In damp, rather acid meadows such as MG5c *Danthonia decumbens* at Burnt House (D.H. Wrench, 1995); M15 *Trichophorum germanicum* at Cramer Gutter; and M25 *Molinia caerulea* at Black Coppice meadow.



### *Dactylorhiza* × *hallii* (Druce) Soó (*maculata* × *praetermissa*)

Just two records: at Whiston Farm (SJ784025, H.H. Hughes, 2004, conf. R.M. Bateman, BIRM) and Venus Pool (SJ547062, 2006, conf. Bateman, BIRM). Typical of neutral wet meadows where the parents occur together.

### *Dactylorhiza incarnata* (L.) Soó

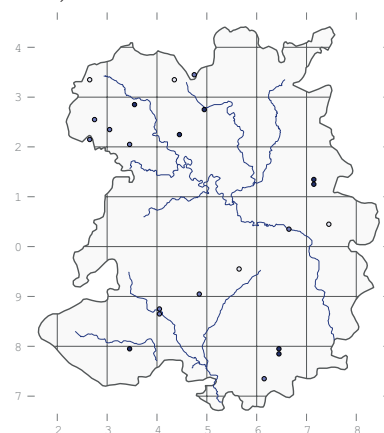
#### Early Marsh-orchid

Native. Scarce. Stable. Axiophyte: wet grassland.

First record (as *Ophrys incarnata*): W.E. Beckwith, 1880, 'in an open wood near Colemere Mere.'

Recorded in damp, neutral to acid grassland such as MG5 *Festuca rubra* at Morton Pool (C. Walker, 1981) and M23 *Juncus effusus* at Ruewood (P. Welsh, 1981), but no longer present at either site. Current localities include Muxton Marsh (SJ716134), the Montgomery Canal at Keeper's Bridge (SJ3528, P. Parker, 2011) and Cramer Gutter (J. Bingham, 2005).

The only subspecies that has been recorded is *pulchella* (Druce) Soó, at Llanhowell (E.H. Wolfe, 1974), Muxton Marsh, Cramer Gutter, Catherton Common (J. Bingham, 1995), Wem Moss (I.R. Bonner, 1968) and by the River Onny at Horderley (E.M. Rutter, 1954).



### *Dactylorhiza praetermissa* (Druce) Soó

#### Southern Marsh-orchid

Native. Scattered. Stable. Axiophyte: grassland.

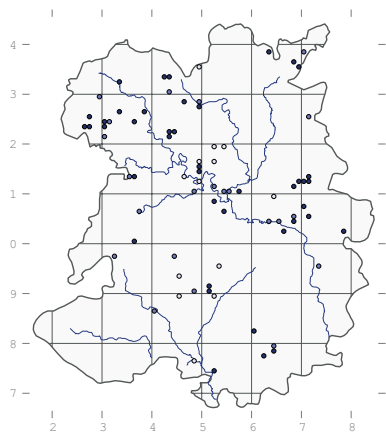
First record (as *Orchis latifolia*): Williams, c. 1800, 'moist meadows.'

In neutral to base-rich, often peaty meadows such as MG8 *Caltha palustris* at Morton Pool and Ruewood Pastures; M22 *Juncus subnodulosus* at Porth-y-waen and Crose Mere (both Trueman, 1981); M24 *Cirsium dissectum* at Black Coppice meadow; and S7 *Carex acutiformis* swamp in the Old River Bed.

Sometimes it is very abundant in wet meadows, as at Muxton Marsh, Venus Pool and Halesfield in recent years. In the past there was confusion between this species and *D. incarnata*. R.H.



Roberts described a plant from Morton Pool as 'a form [of *praetermissa*] which is sometimes mistaken for *D. incarnata* ssp. *pulchella*; pollen normal – not a hybrid' (S.A. Ellis, 1987). It is a weak axiophyte, easily able to colonise abandoned quarries, as at Loton Park (S. Stafford, 1981) or even road verges in industrial estates in Telford (SJ713035, 2010), but it would generally be welcomed in species-rich meadows.



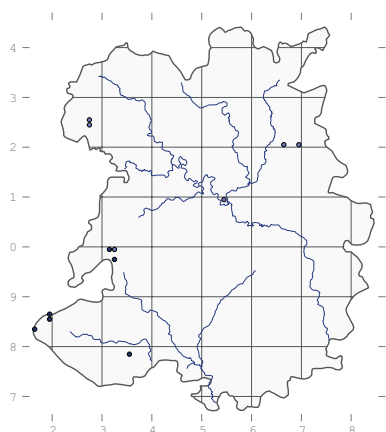
***Dactylorhiza purpurella* (T. & T.A. Stephenson) Soó**

**Northern Marsh-orchid**

Native. Scarce. Stable. Axiophyte: acid grassland.

First record (as *Orchis purpurella*): M. Gepp, 1937, Black Marsh (conf. T. Stephenson, BM).

In marshy grassland in the hills, currently known at Black Marsh (SO3199, J. Clayfield, 2010), Cefn Vron (SO168832, Clayfield, 2009), the Riddings (SO190861, R. Smith, 2003) and at Llanbrook (SO3578, Clayfield, 2010), where it is probably introduced. This is an unusual example of a species that appears to be spreading southwards.



***Dactylorhiza traunsteinerioides* (Pugsley)**

R.M. Bateman & Denholm

**Narrow-leaved Marsh-orchid**

Just one record (as *D. traunsteineri*):

E.M. Rutter, det. V.S. Summerhayes, 1958, Maesbury Marsh.

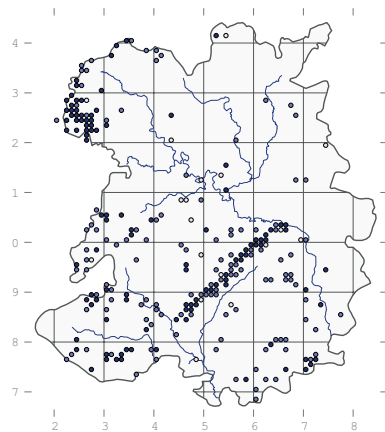
***Orchis mascula* (L.) L.**

**Early-purple Orchid**

Native. Local. Stable. Axiophyte: woodland and grassland.

First record: Williams, c. 1800, 'meadows and old pastures.'

Occasional in woods on calcareous soils throughout, largely restricted to W8 *Fraxinus excelsior* woods in places like Blakeway Coppice, Blodwel Rock (Trueman, 1981), and Haughmond Abbey Wood; but also occurring in limestone grassland such as CG2 *Avenula pubescens* on a roadside verge at Pant (Trueman, 1981) and MG5 *Festuca rubra* on Moelydd. It is a weak axiophyte of ancient woodland and often a coloniser of disturbed grassland, as at Pattens Rock Quarry on Benthall Edge. At Attingham Park it was found to be one of the first 'ancient woodland' colonisers of maturing plantations (Lockton & Whild 2005).



***Neotinia ustulata* (L.) R.M.**

Bateman, Pridgeon & M.W. Chase

**Burnt Orchid**

Native. Rare. Last recorded in 1904. Grassland.

First record (as *Orchis ustulata*): T. Purton, 1817, 'at the Woodlands, near Bridgnorth.'

In closely-grazed calcareous grasslands, recorded at Overton Lodge (T. Salwey, 1841), Sallow Coppice, Millichope (W. Corbett, 1841 – W. Beacall, 1904), 'some grass-fields under Wenlock Edge, near Harley' (W.E. Beckwith, 1882 – J.D. La Touche, 1888) and Munslow (W.E. Thompson. 1900).

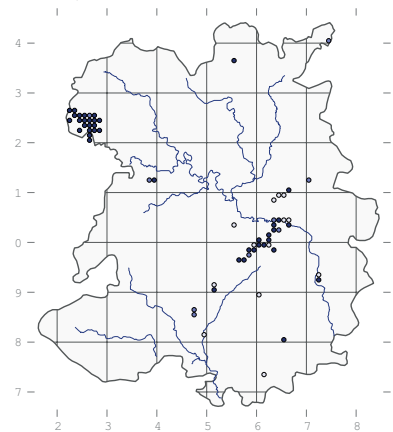
***Anacamptis pyramidalis* (L.) Rich.**

**Pyramidal Orchid**

Native. Local. Stable. Axiophyte: grassland and quarries.

First records (as *Orchis pyramidalis*): Williams, c. 1800, 'old pastures about Stevens Hill near Cound; Much Wenlock; Earls Ditton.'

In calcareous grasslands such as CG2 *Avenula pubescens* at Llanymynech Rocks (Trueman, 1981); CG3 *Bromopsis erecta* at Hilltop and Lea Quarry; and MG5 *Festuca rubra* in Farley Dingle and on Wenlock Edge. It is often found in limestone quarries and, in the past, around limekilns. It sometimes occurs in more ruderal habitats such as a road verge in Bridgnorth or on an old concrete runway at Prees Heath (S. Lewis, 2008).



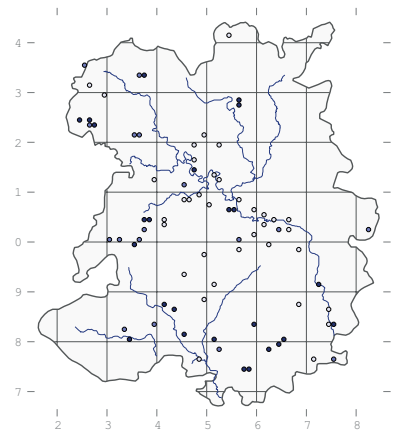
***Anacamptis morio* (L.) R.M.**

Bateman, Pridgeron & M.W. Chase

**Green-winged Orchid**

Native. Scattered. Stable. Axiophyte: meadows.

First record (as *Orchis morio*): Williams, c. 1800, 'meadows and old pastures.'



Once common in unimproved meadows throughout the county, but now restricted to a small number of unimproved grasslands, often small, privately-owned paddocks. It is only

## Vascular plants

found in MG5 *Festuca rubra* grassland in places like Stocking Meadows (Trueman, 1981), Pennerley Meadows (Trueman, 1994), Callow Lane, Leamoor and Venus Pool. It is easily introduced to new sites by hay strewing, as at Venus Pool and Highley-Alvey Country Park (R.A. Dawes, 2004).

[*Himantoglossum hircinum* (L.) Sprengel, Lizard Orchid

Recorded by William Anstice at Madeley Wood in about 1835.]

### *Ophrys insectifera* L.

#### Fly Orchid

Native. Rare. Last recorded in 1944. Woodland and grassland.

First records: W.P. Brookes, 1841, 'in a few spots in a field at Rowley' and 'on lime rocks at Farley near Wenlock.'

Formerly recorded in three places in the vicinity of Much Wenlock. Brookes's 'lime rocks at Farley' was probably the same site at Wyke (SJ645024) where it was later recorded several times between 1902 (G. Potts) and 1944 (D. Mason). It was never recorded in the field at Rowley (c. SO5999) again. The third site was at Spoonhill (c. SO6295), where it was reported by a Mrs Ellis of the Caradoc Field Club (no date) and later found by W.B. Allen (1921) and G. Potts (1926).

[*Ophrys sphegodes* Miller, Early Spider-orchid

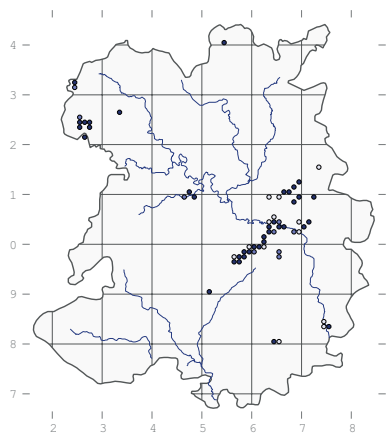
Recorded by H. Spare at Prior's Halton Farm (Leighton 1841).]

### *Ophrys apifera* Hudson

#### Bee Orchid

Native. Local. Stable. Axiophyte: grassland.

First records: Williams, c. 1800, 'about Hewley, and lime kilns at the north end of the Wrekin.'



On base-rich, often disturbed soils in places such as limestone quarries.

Recorded in CG2 *Avenula pubescens* grassland in Dolgoch Quarry, CG7 *Thymus polytrichus* in Farley Quarry and MG5 *Festuca rubra* in Ballstone Quarry and Farley Dingle. In 2003 there were some 250 plants on a traffic island in a retail park in Wellington (C. Hogarth), but it usually occurs in much smaller numbers. The most reliable place to look for it is on Benthall Edge, where it has been known since 1805 (J. Evans); but it is now largely restricted to Pattens Rock Quarry.

## Iridaceae

### *Iris pseudacorus* L.

#### Yellow Iris

Native. Widespread. Stable. Ponds, canals, ditches, rivers, swamps, wet grassland and wet woods.

First record: Williams, c. 1800, 'common.'

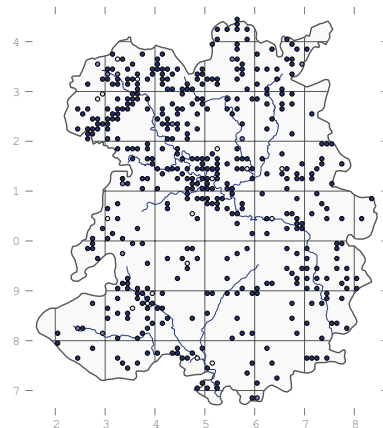
In a wide variety of habitats wherever there is some standing or slow-flowing water. It is common on the margins of lakes and ponds, and it is often planted into ornamental ponds in gardens or close to farms. In open water it is typical of A10 *Persicaria amphibia* community in places like Berrington Pool and Shrawardine Pool, where large stands are found floating in the mere when the water level rises significantly.

It is also recorded in MG10 *Holcus lanatus* at Ruewood and Fenemere (C. Walker, 1988); M23 *Juncus effusus* at Bomere Pool, Ruewood (P. Welsh, 1981) and the Mere at Ellesmere (Trueman, 1981); M27 *Filipendula ulmaria* at Berrington Pool and the Mere; OV26 *Epilobium hirsutum* at Berrington (M.J. Wigginton, 1979) and Bomere pools; and OV30 *Bidens tripartita* at Newton and White meres (Wigginton, 1979).

It is most common in swamps such as S3 *Carex paniculata* at Fenemere (Walker, 1988) and Sweat Mere (B.D. Wheeler, 1986); S5 *Glyceria maxima* at Blake Mere; S7 *Carex acutiformis* in the Old River Bed; S9 *C. rostrata* at Berrington Pool (Wigginton, 1979); S10 *Equisetum fluviatile* in the Old River Bed; S12 *Typha latifolia* at Berrington Pool, Shrawardine Pool and elsewhere; S13 *Typha angustifolia* at Bomere Pool; S14 *Sparganium erectum* at Berrington and Betton (Wigginton, 1979) pools; S18 *C. otrubae* at the Speller; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Fenemere, Oss Mere and elsewhere; S27 *Comarum palustre* at Berrington

Pool (Wigginton, 1979), the Mere and elsewhere; and S28 *Phalaris arundinacea* at the Mere.

It is also found in wet woodland such as W1 *Salix cinerea* scrub at Shomere Pool; W4 *Betula pubescens* at Bomere Pool; in most stands of W5 and W6 *Salix* × *fragilis*; and even sometimes in flushes within W8 *Fraxinus excelsior* woodland, as at Redhill Coppice (Trueman, 1981). Lowland: up to about 425 m at Wildmoor Pool.



### *Iris foetidissima* L.

#### Stinking Iris

Native. Scattered. Increasing. Limestone woods and hedges.

First records: M. McGhie, 'on a warm bank near Shortwood' and F. Dickinson, 'in a small plantation of fir trees between Sharpstones Hill and Sutton' (both Leighton, 1841).

A common garden plant, possibly native in some dry W8 *Fraxinus excelsior* woods such as Craig Sychtyn, where it was first recorded by Sinkin in 1959, Shelton Rough (W. Phillips, c. 1905) and Blakeway Coppice (Montgomery Field Society, 1959). Elsewhere it is a garden escape or self-sown, and it seems particularly frequent in river valleys. In Shrewsbury it occurs in several places close to the Severn, where it does not appear to have been planted or dumped. In other places it is often close to gardens and it is probably planted in churchyards such as Cleobury North (J.A. Thompson, 1997) and Farlow (M.G. Jones, 1978). It crops up in quarries such as Cound Quarry and Mousecroft Lane Gravel Pit (both A.K. Thorne, 2006).

***Crocus vernus* (L.) Hill****Spring Crocus**

Neophyte. Rare. Stable. Parks and gardens.

First record: Leighton, 1835, 'Dorset's Barn Fields.'

Formerly cultivated as a substitute for saffron, and sometimes found naturalised in grassland. This may have been the origin of Leighton's plants at Dorset's Barn (now mostly under houses in Castlefields). It is now often cultivated in parks and gardens, and it occasionally spreads into wild areas, as at the top of Becks Field near Shrewsbury School (J. Morris, 1998).

***Crocus tommasinianus***

Herb.

**Early Crocus**

Planted and sometimes naturalised in churchyards such as Tuckhill (J. Clayfield, 1995) and roadside verges near Myddle (Clayfield, 2002) and near the Old River Bed in Shrewsbury.

***Crocus chrysanthus* (Herb.) Herb.****Golden Crocus**

Planted and barely naturalised in grassland in The Quarry, Shrewsbury.

***Crocus biflorus* Mill.****Silvery Crocus**

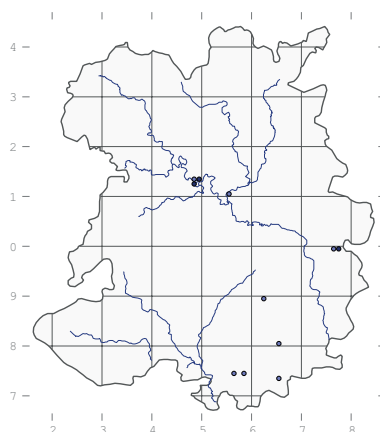
Planted and barely naturalised in grassland in The Quarry, Shrewsbury.

***Crocus nudiflorus* Sm.****Autumn Crocus**

Neophyte. Scattered. Stable. Grassland.

First record: W.E. Beckwith, 1880, 'in fields in the Quarry, Shrewsbury, where it has grown for many years.'

Established and very persistent in grassland in a few places around the county. It still occurs in the Quarry (SJ486122, R. Thornes, 2010) where it grows in MG7 *Lolium perenne* grassland and there is a patch of a hundred or so plants in MG6 *Cynosurus cristatus* grassland in Frankwell Fields (SJ490133), where it was first recorded by W. Phillips in 1891. Elsewhere it has been recorded at Attingham Park (Perring, 1972), Badger Farm (W.E. Hutton, 1977 – C.E. Wright, 1991), Birches Farm (M.G. Jones, 1975, 'a field full'), Gorstley and Knowbury (both C. Raikes, 1977), Neen Sollars (C. Walker, 1978) and Oreton (Jones, 1977).

***Crocus speciosus* M. Bieb., Bieberstein****Crocus**

Well naturalised and abundant in the churchyard at Clive and in the woodland below (SJ514240, 2008, BIRM).

***Gladiolus communis* L.****Wild Gladiolus**

One plant on a farm track near Brockton (SJ318049, J. Langton, 2010) in MG1 *Arrhenatherum elatius* grassland, not near any other introduced species. The plant is intermediate between *G. communis* and *G. illyricus* in various characters.

***Crocsmia paniculata* (Klatt) Goldblatt****Aunt-Eliza**

On a road verge at Ron Hill, Cleobury Mortimer (P.R. Green & A.C. Leslie, 2010).

***Crocsmia × crocosmiiflora* (Lemoine ex Burb. & Dean) Nicholson (*C. aurea* × *potsii*)****Montbretia**

Neophyte. Scattered. Increasing. Gardens, roadsides, woods.

First record: H.M. Davidson, 1978, Hazler Hill.

Occasional as a garden outcast, usually in places close to houses. It is most common on woodland edges and quarries, and is sometimes deliberately planted to add colour to dreary landscapes such as old mine spoil at Ketley (P.S. Gateley, 2003) or Snailbeach. It seems to do particularly well in damp sites, as in W6 *Salix × fragilis* woodland on the north-east shore of White Mere. It is more widely recorded now than previously, and it might well be increasing.

**Xanthorrhoeaceae*****Kniphofia uvaria* (L.) Oken****Red-hot-poker**

Established for a while as a garden escape at Prees Heath (J.H.S. Cox, 1991).

**Alliaceae*****Allium schoenoprasum* L.****Chives**

Established as a garden escape on waste ground at Snailbeach in 2008.

***Allium roseum* L.****Rosy Garlic**

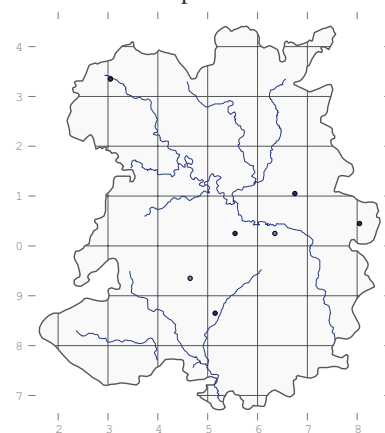
Five flowering stems on a road verge at Goat Hill (SO419790, P.R. Green, 2010).

***Allium triquetrum* L.****Three-cornered Garlic**

Neophyte. Scattered. Casual. Roadsides.

First record: P. Benthall, 1977, 'well established at Farley Dingle.'

Established in a few places, such as the verge of a lane in Ketley Dingle (SJ674104, R.M. Stokes, 2006), around St Cuthbert's Well at Donington (SJ908045, S. & E. O'Donnell, 2007) and by the brook at Cound Moor (SJ551024, M.G. Hoare, 2008). So far it does not seem to persist.

***Allium paradoxum* (M. Bieb.)****Few-flowered Garlic**

Neophyte. Local. Increasing. Roadsides,

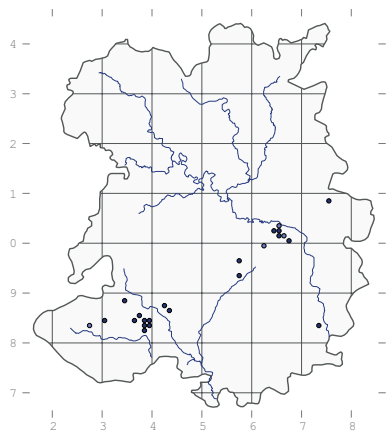
First record: M.H. Bigwood, 1958, 'in the neighbourhood of Hopesay.'

Dominant in the vernal vegetation on roadsides between Hopesay and Wart Hill, where it forms part of a curious vegetation community similar to that of a W8 *Fraxinus excelsior* woodland



## Vascular plants

ground flora, but with non-native species such as *Arum italicum*, *Galanthus nivalis*, *Petasites fragrans* and *Aegopodium podagraria* making up much of the community. It has been here since at least 1927 when it was recorded (as *A. triquetrum*) by H.S.T. Richardson. There are recent records of it at Acton (S. Spence, 2005), Leamoor (F.J. Gomersall, 2006), Blakeway Coppice (J. Clayfield, 2004), along the Borle Brook at Highley, Brockton near Shipton, Burrow Fort (M. Leonard, 2004), Shifnal, Willey Furnace and Woolston. Most of these are small populations, but it is still abundant along Wyke Lane, Posenhall, where it was first recorded by D.I. Kingham in 1979.

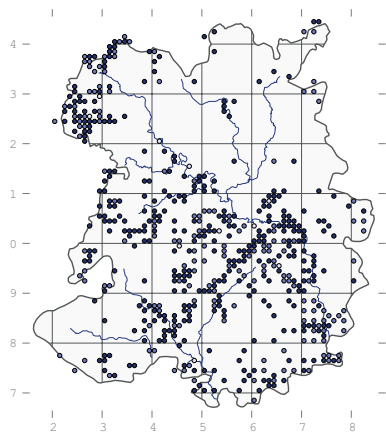


### *Allium ursinum* L.

#### Ramsons

Native. Local. Stable. Axiphyte: woods, river banks and species-rich hedges.

First record: Williams, 1800, 'brooksides, not uncommon – in great abundance by the side of the brook and millstream near Muckley Cross.'



Typically on damp slopes in woodland, where in early spring it often forms almost pure stands in the ground flora of W8f *A. ursinum* woods in places like the Habberley Valley at Earl's Hill, Stanway Coppice, and in most of the woods in the Ironbridge Gorge.

It is also a component of the vegetation in W6 *Salix* × *fragilis* woods in places

like the Borle Brook at Defford, Loamhole Dingle and Redhill Coppice; W6d *Sambucus nigra* by the Severn opposite Shrewsbury Castle; W7 *Lysimachia nemorum* in Limekiln Wood (Trueman, 1981); W8e *Geranium robertianum* along the Borle Brook at New England; and W24 *Rubus fruticosus* hedgebanks at Lower Wallop.

### *Allium oleraceum* L.

#### Field Garlic

Native. Rare. Decreasing. Axiphyte: calcareous grassland.

First record: G. Jordan, 1856, Wyre Forest.

The only current site is in Blakeway Hollow (SO608996) where it was first recorded by M.B. Fuller in 1973. There are usually dozens of plants in several patches along the sunken lane.

In the past it has been recorded at Acton Burnell (R.M. Serjeantson, 1916), Cressage (Serjeantson, 1880, SHY) and High Grosvenor (W.E. Hutton, 1977-'79).

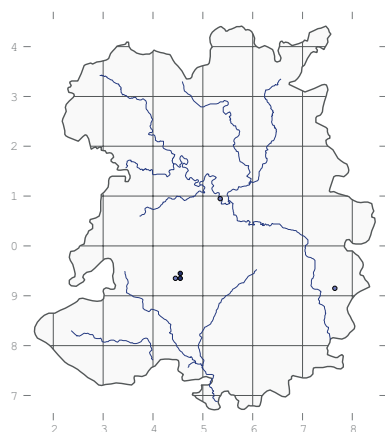
### *Allium carinatum* L.

#### Keeled Garlic

Neophyte. Rare. Stable. Roadsides and gardens.

First record: A.C.O. Jaude, 1925, Church Stretton.

Well established in several places around Church Stretton (for example at the bottom of the Burway at SO451938, D.H. Wrench, 2012) and, formerly, on the roadside at Atcham Bridge (SJ539093, H. Walker, 1960 – J.E. Hawksford, 1972). In 1977 Winifred Hutton reported three spikes on a roadside at Morfe Farm (SO762916) but they have not been seen since.



### *Allium vineale* L.

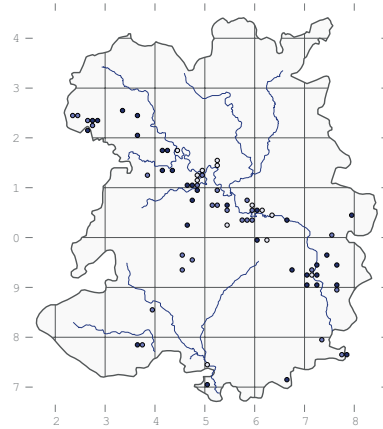
#### Wild Onion

Native. Local. Stable. Grassland.

First record: Williams, c. 1800: 'meadows and pastures, not uncommon. Meadows under Pymley near Sundorne; opposite to Coton Hill, Salop; plentifully in a small triangular meadow adjoining Cantlop Bridge.'

Typical of MG1 *Arrhenatherum elatius* grassland on road verges in places like the track to Day House Farm near Shrewsbury (SJ469101, 2009). At Blakeway Hollow it is found in more calcareous grassland along the verge of the sunken lane, with *A. oleraceum*.

Other recent sites for it include a road verge at Eaton Mascott (SJ547061, 2012), a field gateway at Bayston Hill (SJ487092, K.K. Bell, 2012) and a roadside at Lincoln Hill (SJ669037, 2012).



### *Allium christophii*

#### Star of Persia

One plant (var. *albopilosa*) in MG1 *Arrhenatherum elatius* grassland on the verge of a track at Stokesay (SO435814, 2012).

### *Tristagma uniflorum* (Lindl.)

#### Traub

#### Spring Starflower

Neophyte. Rare.

A few plants naturalised on the roadside at Atcham Bridge (SJ549093, R.M. Stokes, 2010, BIRM).

### *Leucojum aestivum* L.

#### Summer Snowflake

Neophyte. Rare.

A common garden plant, established at Whitcliffe Common (SO5074, 1996) and (ssp. *pulchellum*) on a road verge opposite a cottage at Stanton Long (SO571902, 2010)

***Leucojum vernum* L.****Spring Snowflake**

Neophyte. Rare.

A common garden plant, recorded as naturalised at Aston Munslow (SO506874, M.B. Fuller, 1976) and on the river bank at Shelton Rough (SJ474134, 2011).

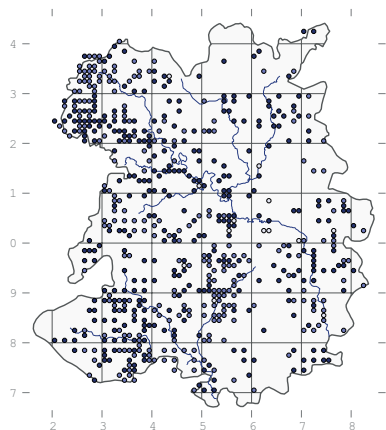
***Galanthus nivalis* L.****Snowdrop**Neophyte. Widespread. Stable.  
Roadsides, gardens, stream banks and woods.

First record: Williams, c. 1800, 'by the side of the brook between Cound and Cound Moor'.

A southern European species, introduced to Britain several hundred years ago and often grown in gardens. It rarely sets seed, but it reproduces by division of the bulbs, which allows it to spread very effectively along river valleys. By the Coundmoor Brook at Stevenshill there are thousands of plants, and it is abundant downstream as far as the confluence with the Severn. Small patches are often seen on roadsides where it has more obviously been planted and it tends not to persist.

Ismore Coppice, opposite Attingham Park, has a huge population of the double-flowered *G. nivalis* forma *pleniflorus* P.D. Sell, as do some copses within the park itself.

Typical habitat for it is W6 *Salix* × *fragilis* woodland, as at Stevenshill and beside the Severn at Montford; and W8 *Fraxinus excelsior* at Stevenshill. Although it is a neophyte, it is so well naturalised that it would be a useful axiophyte if it were not so often planted out in unsuitable places. It is generally found in the lowlands, but a patch neatly planted near a pool at Abdon Burf (SO596866) was faring perfectly well at an altitude of 515 m in 2012.

***Galanthus plicatus* M. Bieb.****Pleated Snowdrop**

Neophyte. Rare.

Just one record: a few plants on the roadside verge at Knockin Heath (Whild, 2005, BIRM).

***Galanthus elwesii* Hook. f.****Greater Snowdrop**

Neophyte. Rare.

A clump in Old St Chad's churchyard in Shrewsbury (D.H. Wrench, 2008) and another on a roadside near The Cliffe (M. Hoare, 2009).

***Narcissus* spp.****Daffodils**Neophyte. Scattered. Increasing.  
Gardens, roadsides.

The following taxa have been reported as established in the county.

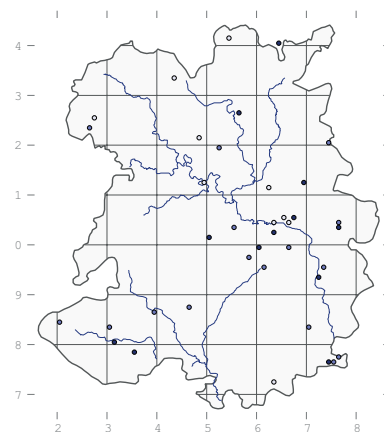
- × *medioluteus* Miller (*poeticus* × *tazetta*), Primrose-peerless: recorded (as *N. biflorus*) in a meadow at Eaton Mascott (Williams, c. 1800), an orchard at Felton Farm (M. McGhie, 1841), a field at Whitcliffe (McGhie, 1841), Buildwas Abbey (A. Bonney, 1900) and Monkthopton (G. Potts, 1928).
- *poeticus* L., Pheasant's-eye Daffodil. First recorded by Williams, c. 1800, 'in a small meadow by the side of the road at Frodesley lane.' There are recent records of it in Old Rectory Wood (A.K. Thorne, 2004) and Lee Brockhurst.
- × *incomparabilis* Mill. (*poeticus* × *pseudonarcissus*), Nonesuch Daffodil: at Bewdley (L. Kitching, 1898, BIRM) and Benthall Edge.
- *pseudonarcissus* L., Daffodil. The native plant was abundant around Monkthopton (SO6394, D. Stoves) and the flowers sold at market in Bridgnorth, but the fields were ploughed up when the crop became unprofitable in the 1960s. Since then cultivars have become widespread, planted throughout on road verges and waste ground; ssp. *obvallaris* (Salisb.) Fernandes, Tenby Daffodil, has been recorded at Cheney Longville, on the side of the road (J. Clayfield, 2003); ssp. *major* (Curtis) Baker, Spanish Daffodil, has been found on a roadside at Overley (S. O'Donnell, 2003).

**Asparagaceae*****Convallaria majalis* L.****Lily of the Valley**

Native. Local. Stable. Axiophyte: woods.

First record: Leighton, 1841, Pimhill.

In a variety of woods, ranging from rather calcareous ones such as Blakeway Coppice to distinctly acidic ones such as Sowdley Wood, where it grows in W16 *Quercus petraea* woodland. Sometimes it is obviously planted, as at Bridgnorth Cemetery (D.H. Wrench, 2009) but it is usually an indicator of ancient woodland.



*Sparganium erectum* at Berrington Pool

## *Polygonatum multiflorum*

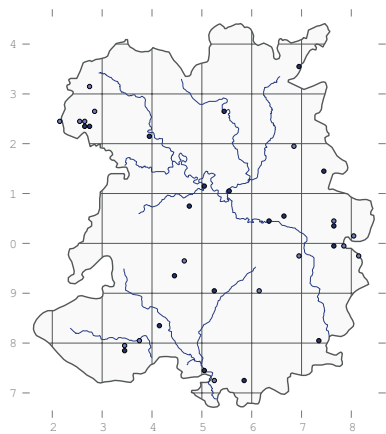
(L.) All.

### Solomon's-seal

Native. Scattered. Stable. Roadsides, waste ground.

First record: A. Bonney, 1899, 'Buildwas, naturalised. Garden escape.'

In this county, usually a garden escape, established in places like the roadside to Llanhowell Farm (SO347789, 2005, BIRM), in Gibbonswell Coppice (2010) and Lilleshall Abbey Woods (SJ746146, A.K. Thorne, 2003). It is not easy to distinguish from the following taxon but is probably native in sites such as Whitcliffe.



## *Polygonatum × hybridum*

Brügger

### Garden Solomon's-seal

Neophyte. Scattered. Stable. Roadsides, waste ground.

First record: T. Beardsley, 1957, 'a large clump by the River Kemp near the quarry in Oaker Wood.'

Occasional as a garden escape, often confused with the former species. There are recent records of it at Merrington Green, Bucknell Hill (J. Bingham, 2004), Hopton Wafers (I.P. Green, 2009) and Cleobury Mortimer (P.R. Green, 2010).

## *Ornithogalum pyrenaicum*

L.

### Spiked Star-of-Bethlehem

Native. Rare. Casual. Track sides.

Just two records: 'in Mr Whitmore's wood at Apley' (E. Williams, c. 1800) and 'one spike by the Jack Mytton Way near Rushbury' (SO516917, N. Robinson, 2011).

## *Ornithogalum umbellatum*

L.

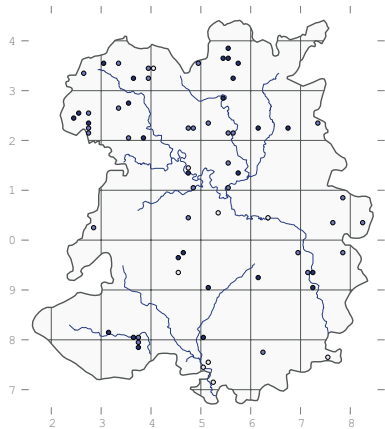
### Star-of-Bethlehem

Neophyte. Scattered. Stable. Gardens, roadsides, meadows.

First record: Williams, c. 1800, 'in the meadow adjoining Mr Williams's house at Eaton Mascot.'

Sometimes abundant in meadows, as at Marton, 'a persistent weed, known the last forty years or so' (P.J.M. Nethercott, 1958) and in a paddock in Withington (SJ576131, N. Walker, 2011). These populations are usually ssp. *campestre* Rouy (= *O. angustifolium* Boreau), which is sometimes considered to be native.

Otherwise it is generally present as small patches on roadsides, as at Prees Heath or along the track to Netchwood Farm. These plants are ssp. *umbellatum* L., which is the common garden plant.



## *Ornithogalum nutans*

L.

### Drooping Star-of-Bethlehem

Neophyte. Rare. Stable. Gardens, roadsides.

First record: G. Jordan, 1856, Wyre Forest.

Well established on a roadside at Shotatton (SJ368228, E.D. Pugh 1969 – W. Jones, 2007) and planted in churchyards such as St Mary's, Astley.

## *Scilla bifolia*

L.

### Alpine Squill

Planted in woodland at Badger Dingle (S. O'Donnell, 1995) and on a road verge at Morfevalley Farm (R.M. Stokes, 2000, BIRM).

## *Scilla forbesii*

(Baker) Speta

### Glory-of-the-snow

Planted in woodland at Venus Pool (R.M. Stokes, 2010) and in the Quarry, Shrewsbury (2010).

## *Scilla luciliae*

(Boiss.) Speta

### Lesser Glory-of-the-snow

A few plants in the Quarry, Shrewsbury (2010).

## *Hyacinthoides non-scripta*

(L.) Chouard ex Rothm.

### Bluebell

Native. Widespread. Stable. Axiophyte: woods and grassland.

First record (as *Scilla nutans*): Williams, c. 1800, 'woods, common.'

Most characteristic of W8 *Fraxinus excelsior* woods in places like Wenlock Edge and Benthall Edge; W9 *Sorbus aucuparia* at Betchcott Dingle; and W10 *Quercus robur* in places like Haughmond Hill and along the lower slopes of the Stiperstones range. It is also found in several other types of wood, such as W6 *Salix × fragilis* at Loamhole Dingle and Redhill Coppice; W7 *Lysimachia nemorum* below the Ercall (Trueman, 1981); W16 *Quercus petraea* at Poles Coppice (Trueman, 1981); W21 *Crataegus monogyna* on Earl's Hill; and W23 *Ulex europaeus* scrub on Old Oswestry, which was formerly W16 woodland.

It persists in grassland where woods have been cleared and is recorded in places like MG5c *Danthonia decumbens* at Hill Houses (D.H. Wrench, 1995); M23 *Juncus effusus* at Brook Vessons; and U1 *Rumex acetosella* on Earl's Hill.

It is usually an indicator of ancient woodland, but it does persist in the open and it colonises hedges and secondary woodland relatively quickly. It is sometimes grown in gardens and planted out, but much less often than the following taxa.





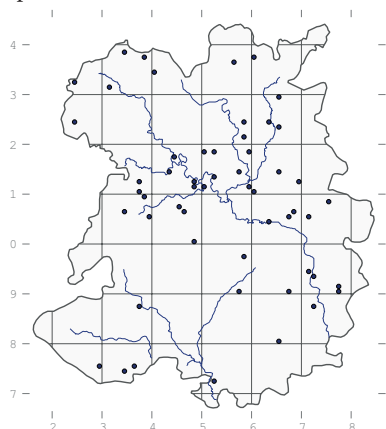
***Hyacinthoides* × *massartiana*** Geerinck (*non-scripta* × *hispanica*)

**Garden Bluebell**

Neophyte. Scattered. Increasing. Gardens.

First record: Lockton & Whild, 1999, Jones's Rough.

Commonly grown in gardens and occasionally dumped on woodland edges or planted out in woods along popular footpaths. It does not seem to spread in the wild.



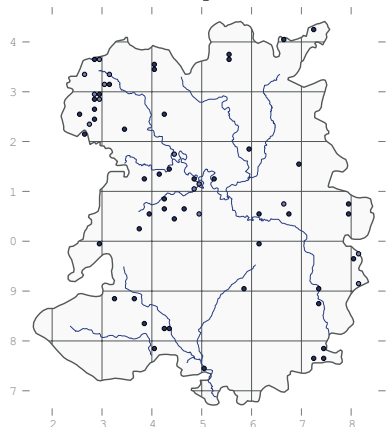
***Hyacinthoides hispanica*** (Miller) Rothm.

**Spanish Bluebell**

Neophyte. Scattered. Increasing. Gardens.

First record: J.C. Melvill, 1923, 'adventitious in shrubberies at Meole [Hall], recurring here and there for several years, 1905-1920; relicts of former cultivation.'

In the same places as *H. × massartiana*, on roadsides, woodland edges and gardens, where it can be vigorous, but it does not seem to spread in the wild.



***Hyacinthus orientalis* L.**

**Hyacinth**

A couple of plants on waste ground at Dawley (SJ696076, R.M. Stokes, 1997).

***Muscari armeniacum***

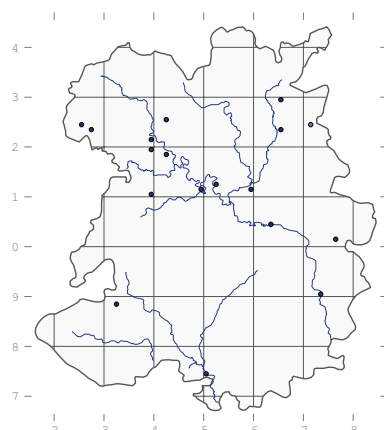
Leichtlin ex Baker

**Garden Grape-hyacinth**

Neophyte. Scattered. Casual. Gardens and roadsides.

First record (as *M. atlanticum*): B.R. Fowler, 1977, 'one plant in lush grass, riverside bank, Sambrook.'

Occasional on roadsides and waste ground, probably from dumped garden rubbish or when deliberately planted out.



***Muscari comosum* (L.) Miller**

**Tassel Hyacinth**

Neophyte. Rare.

On the road verge in front of Preston Montford since 1998, presumably introduced with a seed mix.

***Asparagus officinalis* L.**

**Asparagus**

Neophyte. Rare.

A rare garden escape, well established in a car park at Castlefields for many years and on a road verge at Ruyton-XI-Towns. Previously recorded at the Wrekin (J. Shanklin, 1964).

***Ruscus aculeatus* L.**

**Butcher's-broom**

Neophyte. Scattered. Stable. Gardens, hedges, woods.

First records: W. Phillips, 1878, 'Attingham Park and near Burr's Boathouse; not wild.'

Occasionally planted as ground cover in woods and sometimes established in hedges, presumably from gardens. It is quite persistent, being still present at Attingham Park and at Badger Dingle since 1913 (J.C. Melvill).

**Pontederiaceae**

***Pontederia cordata* L.**

**Pickerelweed**

Planted in a pond at Highley-Alveley Country Park (SO754839, R.A. Dawes, 2006).

**Typhaceae**

***Sparganium erectum* L.**

**Branched Bur-reed**

Native. Local. Stable. Swamps, rivers, canals, ditches, ponds and lakes.

First record (as *S. ramosum*): Williams, c. 1800, 'pools and ditches.'

In a wide range of wetlands, from swamps and wet woodlands to the margins of swift-flowing rivers, mainly in eutrophic situations but sometimes quite mesotrophic. Its main community is S14 *S. erectum* swamp, which is common along the margins of lowland rivers and in meres, ponds and ditches. One of the best places to see this is at Berrington Pool, but it is also found at Kettle Mere, by the Severn at Buildwas (Trueman, 1981), at Brown Moss and elsewhere.

It is frequent in ponds, where it grows in aquatic vegetation communities such as A2 *Lemna minor* at Brown Moss and A3 *Hydrocharis morsus-ranae* in the Newport Canal (Trueman, 1981). The only record of it in a grassland is from Ruewood, where Trueman (1980) found it in a ditch in MG13 *Alopecurus geniculatus* grassland.

Sometimes it occurs in mires, as in M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* at Oxon Pool; and M27c *Filipendula ulmaria* at the Mere. On eutrophic river banks and pool margins it is a minor but frequent component of OV26 *Epilobium hirsutum*, as at Betton and Berrington pools (Wigginton, 1979) and the Old River Bed; and in OV30 *Bidens tripartita* in field ponds such as one near Black Coppice.

Most records are from swamps, including S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S4 *Phragmites australis* at Sweat Mere (Wigginton, 1979); S6 *Carex riparia* at Fenemere; S7 *C. acutiformis* at the Old River Bed; S9 *C. rostrata* at Berrington Pool; S12 *Typha latifolia* in many places; S13 *T. angustifolia* at Fenemere (Wigginton, 1979); S17 *Carex pseudocyperus* at Oxon Pool; S24 *Calamagrostis canescens* at

## Vascular plants

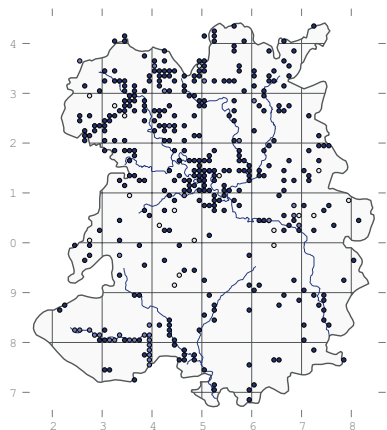
Fenemere; S26 *Phragmites australis* at Fenemere, Oss Mere, Sweat Mere and Top Pool; and S27 *Comarum palustre* at Berrington Pool and the Moors, Ellesmere.

It is ubiquitous in W5b *A. glutinosa* woods around the meres but rarely abundant there as it is not very tolerant of shade. Sometimes it persists in the drier W6 *Salix* × *fragilis* in more drained areas, as at Morton Pool.

Mostly lowland, but up to 425 m in pools on the east side of the Stiperstones (SO376994, 2007) and Clee Hill Quarry (D.H. Wrench, 2004).

Several subspecies have been recorded, but there seems to be little ecological difference between them:

- *ssp. erectum* was first recorded by E.M. Rutter at Brown Moss in 1962 (det. Perring, SHY)
- *ssp. microcarpum* (Neuman) Domin by W.H. Painter at Madeley Court in 1899
- *ssp. neglectum* (Beeby) K. Richt. was first collected by W.E. Beckwith at an unknown location (det. A. Bennett) in the late 18<sup>th</sup> century
- *ssp. oocarpum* (Čelak.) Domin was collected by W.H. Painter at Benthall in 1901 (det. Perring, SHY).



*Luzula campestris*

## *Sparganium emersum*

Rehmann

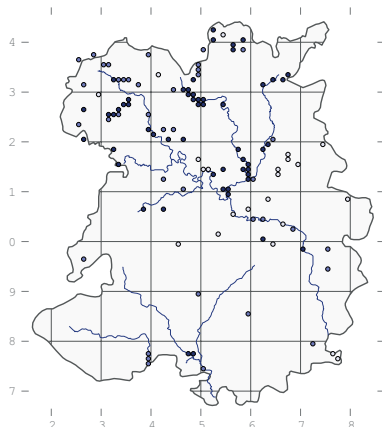
### Unbranched Bur-reed

Native. Local. Stable. Rivers, lakes, ponds, canals and ditches.

First record (as *S. simplex*): Williams, c. 1800, 'ponds and pools, not uncommon.'

Occasional in rivers, mainly in the Perry, Roden and Tern and in the upper reaches of the Severn at Crew Green (Trueman, 1995). It was quite common in the Montgomery Canal until about ten years ago when it was reopened to navigation; since then it has only been found in the offline reserve at Aston Locks. Similarly, it was recorded in the Llangollen, Newport, Prees Branch and Shrewsbury canals in the past.

There are recent records of it places such as a brook at Lostford, Bromfield Quarry (D.H. Wrench, 2012) and Walford Pool (M.S. Duffell, 2012).



## *Sparganium natans* L.

### Least Bur-reed

Native. Rare. Last recorded in 1985. Bogs and mesotrophic pools.

First records: Williams, c. 1800, 'in a ditch on Shomere Moss; in the canal between the Queen's-head turnpike and Woodhouse, near Oswestry.'

Formerly on several of the mosses, but gone from all by the beginning of the 20<sup>th</sup> century, except Brown Moss. It was found there by E.M. Rutter in 1955, and in 1983 Trueman recorded it in S27 *Comarum palustre* vegetation in Pool 5. It persisted until the early 1990s, but was lost when the site scrubbed over to woodland.

Elsewhere it has been recorded at Bomere Pool (Leighton, 1837), Cole Mere (Bowman, 1841), a pool near Eaton Constantine (R.M. Serjeantson, 1880), Hencott Pool (Leighton, 1841) and at the Mere, Ellesmere (J.E. Bowman, 1835).

## *Typha latifolia* L.

### Bulrush

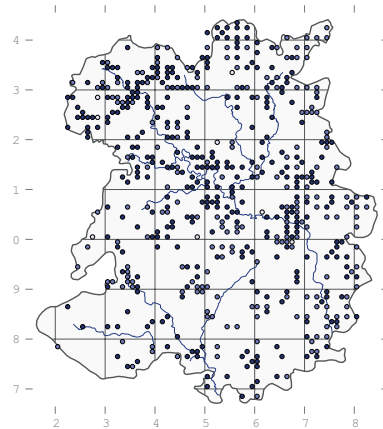
Native. Widespread. Increasing. Lakes, ponds, canals, rivers and ditches.

First record: W. Salusbury, 1578, Whittington Castle.

Typically in stands of S12 *T. latifolia* swamp on the margins of lakes and slow rivers, in ditches, ponds and disused canals. It is tolerant of high levels of eutrophication, but it can tolerate all but the most dystrophic water. On Snipe Bog, for example, there is a stand in the middle of an M2 *S. fallax* lawn, but it only occurs there because a field drain empties into the bog. S12 is found in or around most of the meres. The subcommunity S12b *Mentha aquatica* is known at Brown Moss and Shrawardine Pool, S12c *Alisma plantago-aquatica* at Battlefield, and S12d *Carex rostrata* at Berrington Pool, Brownheath Moss and Shelve Pool.

It is common in a wide range of other wetland communities, such as A10 *Persicaria amphibia* at Berrington Pool; M23 *Juncus effusus* at Newton Mere and Oxon Pool; S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S4 *Phragmites australis* at Sweat Mere (M.J. Wigginton, 1979); S11 *Carex vesicaria* at the Long Bog; S14 *Sparganium erectum* at Berrington Pool and Old Oswestry (Trueman, 1981); S24 *Calamagrostis canescens* at Fenemere and Oss Mere; S26 *Phragmites australis* at Oss Mere and Sweat Mere; and S27 *Comarum palustre* at Berrington Pool, Brown Moss and Shrawardine Pool. At Morton Pool and Newton Mere it persists in W6 *Salix* × *fragilis* woodland.

It readily colonises new sites such as the quarry pools at Dolgoch and Lillshall Quarry and it is often planted into ponds. One of the best places to see it is at Brown Moss, where it grows in a range of different habitats. Its altitudinal limit in Britain is usually given as 500 m at Brown Clee (Wilson 1956), but it is also recorded high on Titterstone Clee and the Stiperstones.



***Typha × glauca (latifolia × angustifolia)* Godron****Hybrid Bulrush**

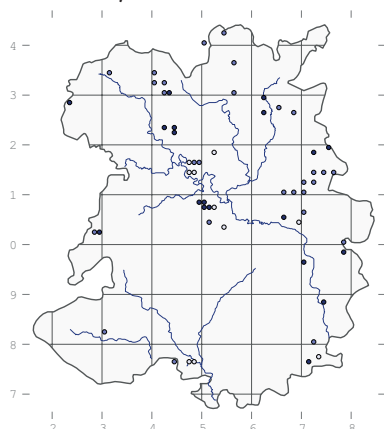
Recorded at Upper Pool, Badger Dingle (SO771993, R.M. Stokes, 1996) and in a moss-filled hollow on Hodnet Heath (SJ621262, 2011, BIRM).

***Typha angustifolia* L.****Lesser Bulrush**

Native. Local. Stable. Axiophyte: meres and mosses.

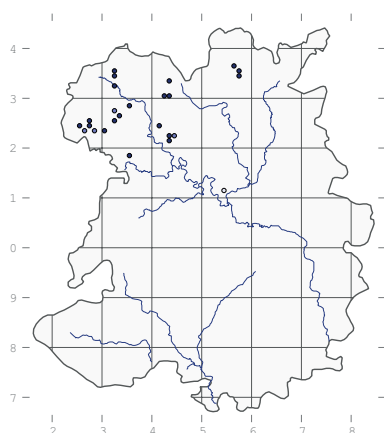
First record: Williams, c. 1800, 'Shomere Pool; two Betton pools.'

Largely restricted to the meres such as Bomere Pool (where it was first recorded by C.C. Babington and Leighton in 1832), Crose Mere (E.A. Wilson, 1950) and Fenemere (F. Rose, 1959). Records of it away from lakes have not often been repeated and some of them may be errors.

**Juncaceae*****Juncus subnodulosus* Schrank****Blunt-flowered Rush**

Native. Local. Stable. Axiophyte: fens.

First record: J.E. Bowman, 1841, 'more or less abundant on the margins of most of the meres near Ellesmere. Colemere Mere, near the limekiln.'



In marshy grassland and fens on base-rich soils. It is recorded in MG5

*Festuca rubra* at Morton Pool (C. Walker, 1986); M22 *J. subnodulosus* in many places, including Black Coppice, Morton Pool and Sweeny Fen; M27 *Filipendula ulmaria* at Black Coppice and Crose Mere; and S26 *Phragmites australis* at Black Coppice. In the past it seems sometimes to have been associated with limekilns and it turns up on disturbed sites like Prees Heath, when a pond was dug a few years ago (SJ561367, 2012).

***Juncus articulatus* L.****Jointed Rush**

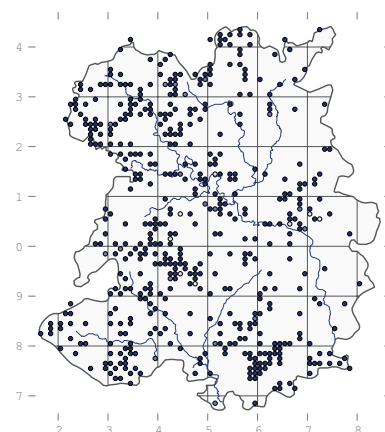
Native. Widespread. Stable. Pool margins, marshy grassland and river banks.

First record: Williams, c. 1800, 'sides of pools, bogs and ditches, common.'

In a wide range of marshy grasslands, including MG5 *Festuca rubra* at Morton Pool (C. Walker, 1981); MG5c *Danthonia decumbens* at Hill Houses (D.H. Wrench, 1995), Llanhowell (Trueman, 1981) and Tana Leas Farm (Wrench, 1995); MG8 *Caltha palustris* at Crose Mere, Morton Pool and Ruewood Pastures; MG10 *Holcus lanatus* at Broncroft, Brown Moss and Fenemere; MG13 *Alopecurus geniculatus* at Brown Moss and Fenemere; and U5 *Nardus stricta* on the Stiperstones (the latter two by Trueman, 1983).

It is also found in flushes and wet heaths such as M6 *Carex echinata* on the Stiperstones (Trueman, 1981); M10 *C. dioica* on Hope Bowdler (P. Eades) and Trefonen Marshes; M13 *Palustriella commutata* at Trefonen; M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979), Morton Pool (Wrench, 1991) and Sweeny Fen; M23 *J. effusus* at Oxon Pool and Sweat Mere; M27 *Filipendula ulmaria* at Cole Mere; and M35 *Montia fontana* on Caer Caradoc (R. Meade, 2010).

It has also been recorded in OV30 *Bidens tripartita* at Marton Pool, Chirbury, and White Mere (both Wigginton, 1979); OV31 *Rorippa palustris* at Brown Moss and Fenemere (Wigginton, 1979); OV35 *Lythrum portula* at Brown Moss; S9 *Carex rostrata* at Wildmoor Pool (Trueman, 1981); S12 *Typha latifolia* at Brown Moss and Battlefield pond; S14 *Sparganium erectum* at Betton Pool; and S27 *Comarum palustre* at Berrington Pool (the last two by Wigginton, 1979).

***Juncus × surrejanus* Druce ex Stace & Lambinon (*acutiflorus* × *articulatus*)**

Native. Scattered. Stable. Flushes and fens.

First record: Sinker, 1966, Sweeny Fen.

Probably a common hybrid, but rarely recorded. It occurs in similar places to *J. acutiflorus* and has been recorded in M22 *J. subnodulosus* at Sweeny Fen (Sinker, 1966); M23a *J. acutiflorus* on Stapeley Hill; and M25 *Molinia caerulea* at Shelve Pool (both Trueman, 1981).

***Juncus acutiflorus* Ehrh. ex Hoffm.****Sharp-flowered Rush**

Native. Local. Decreasing. Flushes, marshy grassland, ditches.

First record: Leighton, 1841, 'bogs and wet ground, common.'

Abundant in M23 *Juncus effusus* and especially M23a *J. acutiflorus* flushes and rush-pasture throughout the county. Particularly good stands are found in peaty meadows around some of the meres and in upland sites like Rhos Fiddle and by Boyne Water.

It is also occasional in marshy grassland and wet areas in MG5



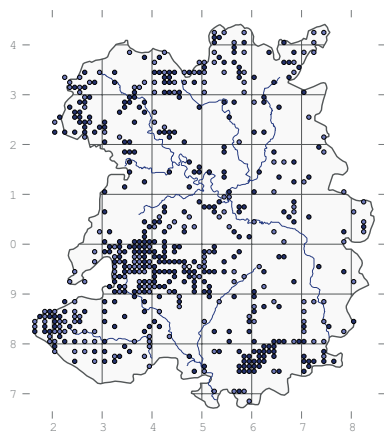
*Schoenoplectus tabernaemontani* at Crose Mere



*Festuca rubra* meadows at Haughmond Hill, Ruewood and Stapeley Hill (Trueman, 1981); MG6 at Melverley Farm and Ruewood; MG8 *Caltha palustris* at Crofts Mill (C. Walker, 1994), Crose Mere and elsewhere; and MG9 *Deschampsia cespitosa* at Cole Mere and Hill Houses.

In upland flushes and lowland fens it is found in M6 *Carex echinata* on Stapeley Hill (Trueman, 1981); M15 *Trichophorum germanicum* at Cramer Gutter; M24 *Cirsium dissectum* at Black Coppice; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981), Steel Heath and Black Coppice; M27 *Filipendula ulmaria* at Berrington Pool, Cole Mere and elsewhere; OV26 *Epilobium hirsutum* at Berrington Pool and the Old River Bed; and OV30 *Bidens tripartita* around a pool at Black Coppice.

It is also common in swamps such as S7 *Carex acutiformis* in the Old River Bed; S9 *C. rostrata* at Berrington Pool (M.J. Wigginton, 1979); S10 *Equisetum fluviatile* in the Old River Bed; S14 *Sparganium erectum* on the margin of Kettle Mere; S24 *Calamagrostis canescens* at Fenemere; and S27 *Comarum palustre* at Berrington Pool (Wigginton, 1979) and the Mere at Ellesmere. Sometimes it persists in wet woodlands such as W4 *Betula pubescens* on Haughmond Hill.



### *Juncus bulbosus* L.

#### Bulbous Rush

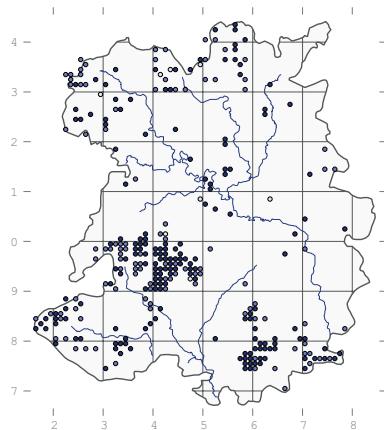
Native. Local. Stable. Axiophyte: bogs and upland flushes.

First record (as *J. uliginosus*): Williams, c. 1800, 'in wet ditches, common.'

Characteristic of oligotrophic to dystrophic wetland habitats such as A2 *Lemna minor*, OV30 *Bidens tripartita* and OV31 *Rorippa palustris* communities in pools on Brown Moss. It has also been recorded in M2b *Sphagnum fallax* lawns on the bog on Brown Moss (Trueman, 1981) and at Rhos Fiddle; M6 *Carex echinata*

on the Stiperstones; M10 *C. dioica* on Hope Bowdler (P. Eades, 2010) and Titterstone Clee (A.K. Thorne, 1999); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991); M23 *Juncus effusus* in Gogbatch (C.M. Owen, 1983) and on the Stiperstones; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); M29 *Potamogeton polygonifolius* in Callow Hollow (R. Tapper, 1983); and M35 *Montia fontana* in Boiling Well (Owen, 1983) and on Caer Caradoc (Meade, 2010).

At Wildmoor Pool it is found in S9 *Carex rostrata* swamp (Trueman, 1981) and it has been recorded in seasonally inundated U4 *Agrostis capillaris* grassland on the Long Mynd and W4 *Betula pubescens* woodland on Haughmond Hill.



### *Juncus squarrosus* L.

#### Heath Rush

Native. Local. Stable. Axiophyte: acid grassland, heaths and moors.

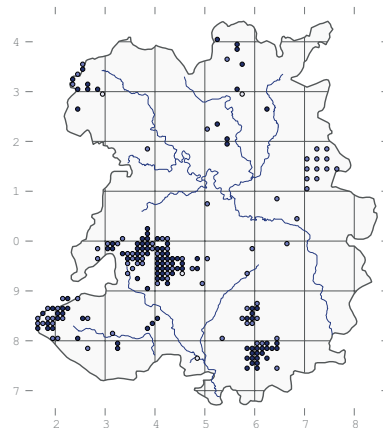
First record: Williams, c. 1800, 'heaths, common.'

Restricted to acid, peaty habitats, mainly in the uplands. It is recorded in H9 *Deschampsia flexuosa* at Lower Short Ditch and H12 *Vaccinium myrtillus* at Rhos Fiddle.

In mires it is found in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M10 *C. dioica* on Titterstone Clee (A.K. Thorne, 1999); M15 *Trichophorum germanicum* at Cramer Gutter; M16 *Sphagnum compactum* at Hodnet Heath; M23 *Juncus effusus* in Gogbatch (C.M. Owen, 1983); and M35 *Montia fontana* in Carding Mill Valley and on Wild Moor (both Tapper, 1983).

In grassland, there are records of it in U2 *Deschampsia flexuosa* at Brown Moss; U4 *Agrostis capillaris* at Rhos Fiddle; U5 *Nardus stricta* at Rhos

Fiddle, the Stiperstones and Titterstone Clee (Trueman, 1981).



### *Juncus tenuis* Willd.

#### Slender Rush

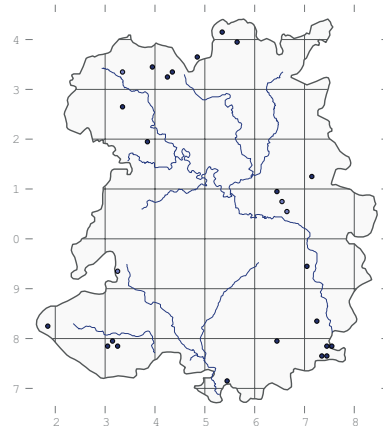
Neophyte. Scattered. Increasing.

Quarry floors, woodland paths, pool margins.

First record: P.H. Oswald, 1964, 'Little Wenlock – old working.'

Typical of transport corridors and quarry floors, but occasionally established in semi-natural situations. At Brown Moss it has been known in one place on the margin of Pool 6 near the main car park (W.V. Prestwood, 1977) but although the population fluctuates from year to year it has not spread far. It was first recorded at Cole Mere in 1972 (Sinkler) but again is non-invasive. Meanwhile it has become abundant in places such as an abandoned quarry on Lawrence's Hill and along paths through post-industrial wasteland at Granville Country Park.

In 2007 B. Laney & M. Jannink reported it as abundant in an arable field margin at Caynham. At Brown Moss it has been recorded in MG10 *Holcus lanatus* grassland, which is typical of its inundation grassland habitat. It also grows along woodland paths in W8 *Fraxinus excelsior* woodland near the Borle Brook at New England, where it was first recorded by W.A. Thompson in 1981.



***Juncus compressus* Jacq.****Round-fruited Rush**

Native. Rare. Stable. Tidal rivers.

First record: A. Bloxham, 1841, 'banks of the river near Bridgnorth.'

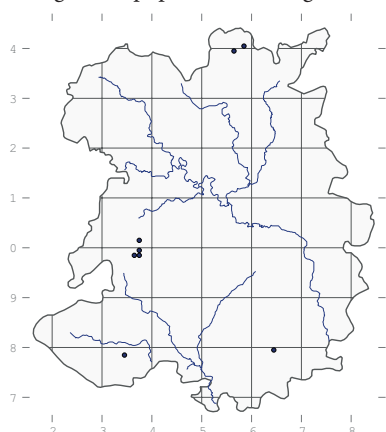
Very rare in the Severn below Bridgnorth, where it has been recorded about every 50 years since it was first found there. The most recent find was by B. Westwood and J. Bingham in 2011, at The Heath (SO751826), on boulders in the river. It was presumably brought here on boats, birds or possibly tidal surges, as it is a saltmarsh plant.

***Juncus foliosus* Desf.****Leafy Rush**

Native. Local. Stable. Axiphyte: pools and upland flushes.

First record: Whild (conf. C.A. Stace), 1997, the Stiperstones (SO369981, BIRM).

An annual on the margins of oligotrophic pools such as Pool 6 at Brown Moss (1997) and a farm pond at Melverley Farm (1998). In its upland sites it is found along flushes and in springhead pools. It seems to appear rather irregularly, having been recorded in most sites only once. At Cramer Gutter it occurs on bare mud by a pool in the south-west corner of the reserve, where it comes up most years. On the Stiperstones it is now recorded in several places, including a spring at the head of Crowsnest Dingle. Because it was only recently (1978) described as separate from other members of the *J. bufonius* aggregate, there is no historical data to assess any change in its population or range.

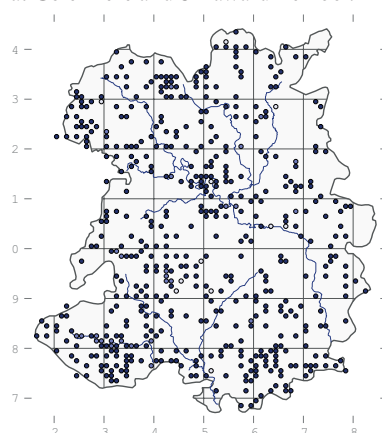
***Juncus bufonius* L.****Toad Rush**

Native. Widespread. Stable. Pool margins, woodland tracks and marshy grassland.

First record: Williams, c. 1800, 'sides of pools, places overflowing with water in winter (in a sandy soil), common.'

In wet hollows in grassland, on pool margins and along rides in woodland. It is found in MG5c *Danthonia decumbens* grassland on Stapeley Hill (Trueman, 1981); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *J. effusus* at Gogbatch (C.M. Owen, 1983), Haughmond Hill and elsewhere; M35 *Montia fontana* in Lightspout Hollow and Wild Moor (both R. Tapper, 1983); OV30 *Bidens tripartita* at White Mere (Wigginton, 1979); OV31 *Rorippa palustris* at Brown Moss, Fenemere (Wigginton, 1979) and Venus Pool; OV32 *Ranunculus sceleratus* at Crose Mere and White Mere; and OV35 *Lythrum portula* on the margins of pools at Brown Moss.

There are also records of it in S12 *Typha latifolia* swamp at Shrawardine Pool and W5 *Alnus glutinosa* woodland at Cole Mere and Shrawardine Pool.

***Juncus ranarius* Songeon & E.D. Perrier****Frog Rush**

Rare, by the edge of the road between Hodnet and the new bypass (SJ616275, Lockton, 2009, BIRM).

***Juncus inflexus* L.****Hard Rush**

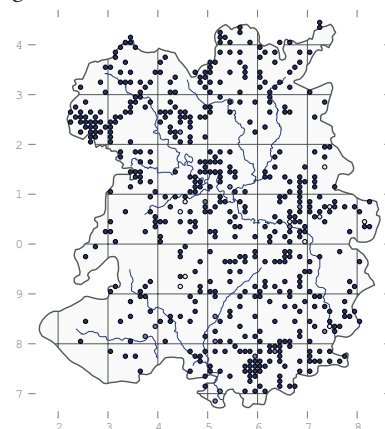
Native. Widespread. Stable. Marshy grassland and flushes.

First record (as *J. glaucus*): Williams, c. 1800, 'moist meadows, pastures and roadsides, common.'

Mostly in rather open situations, typically in grassland such as MG5

*Festuca rubra* in places like Morton Pool (Trueman, 1981) or a quarry on the Ercall; MG8 *Caltha palustris* at Morton Pool (D.H. Wrench, 1991) and Ruewood Pastures; MG10 *Holcus lanatus* at Broncroft and Brown's Corner (Trueman, 1981). It is also found in M10 *Carex dioica* in Shirlett Gutter (Trueman, 1981); M13 *Palustriella commutata* at Trefonen Marshes; M22 *Juncus subnodulosus* at Crose Mere, Sweeny Fen and elsewhere; M27 *Filipendula ulmaria* at Crose Mere and Tunstall Wood; OV31 *Rorippa palustris* at Fenemere (M.J. Wigginton, 1979); and OV32 *Ranunculus sceleratus* on the margin of Crose Mere.

In swamps it is recorded in S14 *Sparganium erectum* at Betton Pool (Wigginton, 1979) and S18 *C. otrubae* at the Speller. Sometimes it persists in open woodland such as W5 *Alnus glutinosa* at Oss Mere.

***Juncus effusus* L.****Soft Rush**

Native. Widespread. Stable. Grassland, flushes, mires and wet woodland.

First record: Williams, c. 1800, 'moist meadows, pastures and roadsides, common.'

A very common plant in a range of wetland habitats, most characteristically in M23 *J. effusus* and MG10 *Holcus lanatus* rush-pastures throughout.

It is also recorded in H12 *Vaccinium myrtillus* heath at Rhos Fiddle; MG5 *Festuca rubra* grassland in places like Ruewood Pastures and along valleys on the Long Mynd; MG6 *Cynosurus cristatus* at Cramer Gutter; MG8 *Caltha palustris* at Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* at Crose Mere and Easthope Wood; MG13 *Alopecurus geniculatus* at Fenemere; U2 *Deschampsia flexuosa* at Brown Moss; U4 *Agrostis capillaris* at Rhos Fiddle; and U5 *Nardus stricta* on

the Stiperstones and Titterstone Clee (A.K. Thorne, 1999).

In mires it is often abundant in M2 *Sphagnum fallax* in places like Brown Moss, Snipe Bog and Rhos Fiddle; M4 *Carex rostrata* around Clarepool Moss and Snipe Bog; M6 *C. echinata* on the Long Mynd (R. Tapper, 1983), Stiperstones and Stapeley Hill (both Trueman, 1981); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010) and Hope Bowdler (P. Eades, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Crose Mere, Sweeny Fen and elsewhere; M25 *Molinia caerulea* at Black Coppice; M27 *Filipendula ulmaria* in many places, including Cole Mere, the Mere at Ellesmere and Tunstall Wood; and M35 *Montia fontana* at Boiling Well (Trueman, 1981) and Lightspout Hollow (Tapper, 1983).

It is frequent in wetlands alongside rivers and lakes such as OV26 *Epilobium hirsutum* at Bomere Pool; OV30 *Bidens tripartita* at Newton Mere and White Mere (both M.J. Wigginton, 1979); O32 *Myosotis scorpioides* at Oxon Pool and White Mere; OV35 *Lythrum portula* at Llyn Rhuddwyn (Trueman, 1981) and Newton Mere; and even in wet hollows in OV27 *Chamerion angustifolium* tall herb in restoration areas on Prees Heath.

In swamps it is usually not particularly abundant, but it is widely distributed in communities such as S3 *Carex paniculata* at Fenemere (C. Walker, 1988) and Sweat Mere (B.D. Wheeler, 1986); S6 *C. riparia* at Blake Mere (Wigginton, 1979); S7 *C. acutiformis* in the Old River Bed; S9 *C. rostrata* at Berrington Pool (Wigginton, 1979) and Wildmoor Pool (Trueman, 1981); S10 *Equisetum fluviatile* in the Old River Bed; S11 *C. vesicaria* at the Long Bog; S12 *Typha latifolia* at Battlefield Pond, Shrawardine Pool and elsewhere; S14 *Sparganium erectum* at Kettle Mere, Old Oswestry and elsewhere; S17 *C. pseudocyperus* at Oxon Pool and Shrawardine Pool; S18 *C. otrubae* at the Speller; S22 *Glyceria fluitans* in the Coalport Canal (Trueman, 1981); S24 *Calamagrostis canescens* at Fenemere and Oss Mere (both Wigginton, 1979); S26 *Phragmites australis* in a ditch at Cole Mere; and S27 *Comarum palustre* at Berrington Pool, the Mere at Ellesmere and elsewhere.

Finally, it is common in wet woods and in damp hollows and along tracks in other types of woodland including all stands of W1 *Salix cinerea*; W4

*Betula pubescens* at Lin Can Moss, Bomere Pool and many other places; in all W5 *Alnus glutinosa* woods; W6 *Salix* × *fragilis* at Newton Mere; W6b *Salix* × *fragilis* at Shrawadine Pool and the Mere; W7 *Lysimachia nemorum* at Brook Vessons; W8 *Fraxinus excelsior* at Round Oak and New England; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Bannister's Coppice, Haughmond Hill and elsewhere; and W16 *Q. petraea* at Oaks Wood.

The var. *subglomeratus* DC. has been recorded at Whixall Moss (Perring, 1989), Aston Locks reserve (R.V. Lansdown, 1998) and the Mere.



## *Juncus* × *kern-reichgeltii* Jansen & Wacht. ex Reichg. (*conglomeratus* × *effusus*)

'Abundant at Wildmoor Pool' (SO424965, R.D. Pryce, conf. A.O. Chater, 2007, BIRM).

## *Juncus conglomeratus* L. Compact Rush

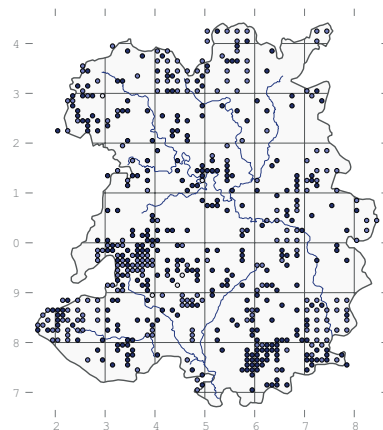
Native. Widespread. Stable. Grassland, mires and heaths.

First record: Williams, c. 1800, 'moist pastures in a clay soil.'

Occasional in wetland habitats, usually in grazed pastures. The only heath it has been recorded in is H12 *Vaccinium myrtillus* at Rhos Fiddle. In grasslands it has been found in MG5c *Danthonia decumbens* at Tana Leas Farm (D.H. Wrench, 1995); MG6 *Cynosurus cristatus* at Wilderhope; MG8 *Caltha palustris* at Meverley Farm; MG9 *Deschampsia cespitosa* at Hill Houses; U2 *D. flexuosa* at Brown Moss; and U5 *Nardus stricta* at Rhos Fiddle and Titterstone Clee (A.K. Thorne, 1999).

In mires it occurs in M6 *Carex echinata* on the Stiperstones (Trueman, 1981); M10 *C. dioica* on Titterstone Clee (Thorne, 1999); M13 *Palustriella commutata* on Hope Bowdler (P. Eades,

2010); M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Sweeny Fen; M23 *J. effusus* on Haughmond Hill, Meverley Farm and Hope Bowdler (Eades, 2010); and M27 *Filipendula ulmaria* at Black Coppice. Finally, it is recorded in S12 *Typha latifolia* swamp at Battlefield pond.

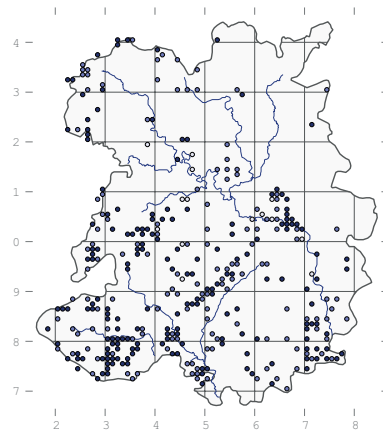


## *Luzula pilosa* (L.) Willd. Hairy Wood-rush

Native. Local. Stable. Axiophyte: woods.

First record (as *Juncus pilosus*): Williams, c. 1800, 'woods, not uncommon.'

Occasional in woods such as W8 *Fraxinus excelsior* at New England; W10 *Quercus robur* in Harton Hollow; and W16 *Q. petraea* at Oaks Wood. It is largely confined to ancient woodlands, but it does persist in open grassland and scrub where woods have been felled and on roadside verges below ancient hedges.



## *Luzula sylvatica* (Huds.) Gaudin

## Great Wood-rush

Native. Local. Axiophyte: acid woods.

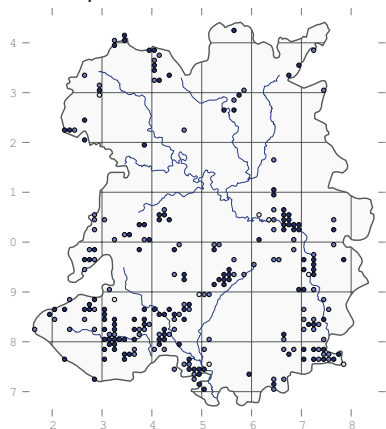
First record (as *Juncoides sylvaticum*): L. Brown, 1726, Bishops Castle.

In ancient woods, typically on the more acid soils, but not restricted to them, and sometimes persisting in the



open after woods are felled. Perhaps the most dramatic example is at Old Oswestry, where the woodland was cleared in the 1960s or 70s, and there is still an open sward of *Luzula sylvatica* over much of the hill after 30 or 40 years of cutting and grazing.

It is recorded in W8 *Fraxinus excelsior* at Sodylt Wood, Stoke Wood and elsewhere; W10 *Quercus robur* at Stanway Coppice; W16 *Q. petraea* at Oaks Wood and Sowdley Wood; W17 *Leucobryum glaucum* at Oaks Wood; and W23 *Ulex europaeus* on Old Oswestry.



### *Luzula campestris* (L.) DC. Field Wood-rush

Native. Widespread. Stable. Grassland.

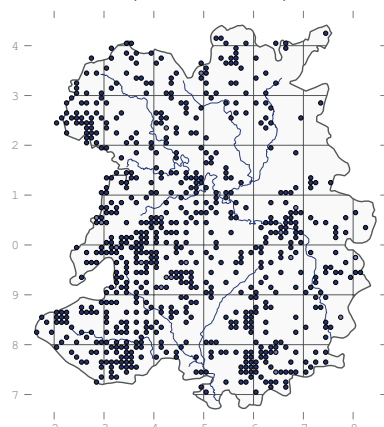
First record (as *Juncus campestris*): Williams, c. 1800, 'meadows and pastures, common.'

Common in most types of unimproved grassland, from calcareous to acid and at any altitude. It is recorded in CG2 *Avenula pubescens* at Craig Sychtyn, Pant (Trueman, 1981) and Windmill Hill; CG7 *Thymus polytrichus* at Moelydd; CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Minton Batch (R. Tapper, 1983).

In mesotrophic grasslands it is found in MG4 *Sanguisorba officinalis* at Lord's Meadows (Trueman, 1981); in all three subcommunities of MG5 *Festuca rubra* throughout; MG6 *Cynosurus cristatus* in places like Becks Field and Ruewood; MG7e *Plantago lanceolata* at Rudge (Trueman, 1981); and MG8 *Caltha palustris* at Melverley Farm, Morton Pool and Ruewood. It is perhaps most abundant in upland grasslands such as U1 *Rumex acetosella* at Attingham Park, Earl's Hill, Prees Heath and many other places; U4 *Agrostis capillaris* at Brown Clee, Rhos Fiddle and elsewhere; U5 *Nardus stricta* at Squilver (Trueman, 1981) and Titterstone Clee (A.K. Thorne,

1999); and U20 *Pteridium aquilinum* in Gogbatch (C.M. Owen, 1983).

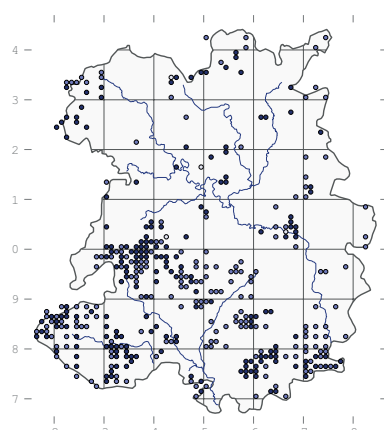
In other habitats, it has been recorded in patches of H8 *Ulex gallii* at Prees Heath; H12 *Vaccinium myrtillus* on the Stiperstones; M22 *Juncus subnodulosus* at Crofts Mill (C. Walker, 1994) and Porth-y-waen (Trueman, 1981); M23 *J. effusus* in Gogbatch (Owen, 1983); M27 *Filipendula ulmaria* at Marl Allotment; and W16 *Quercus petraea* at Oaks Wood (Trueman, 1981).



### *Luzula multiflora* (Ehrh.) Lej. Heath Wood-rush

Native. Local. Decreasing. Axiophyte: mires and acid grassland.

First record (as *L. campestris* var. *congesta*): Leighton, 1835, Shomere Moss.



Typically on rather damp, peaty soils in mire communities such as M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* at Brook Vessons; M23a *J. acutiflorus* on the Stiperstones; and M25 *Molinia caerulea* at Black Coppice, Shelve Pool (Trueman, 1981) and Steel Heath. It is occasional in acid grassland such as U4 *Agrostis capillaris* at Rhos Fiddle; U5 *Nardus stricta* at Rhos Fiddle and Titterstone Clee (A.K. Thorne, 1999); and woods such as W4 *Betula pubescens* at Haughmond Hill; and W10 *Quercus robur* at Bannister's Coppice.

The ssp. *congesta* (Thuill.) Arcang. has been recorded many times since Leighton's record in 1835, whereas ssp. *multiflora* does not seem to have been specifically recorded before 1997 (the Hollies, SJ383012, Lockton).

### *Luzula nivea* (L.) DC.

#### Snow-white Wood-rush

A garden escape in a hedge at Church Stretton (SO457934, E. Allbutt, conf. C.A. Stace, 2000, BIRM).

## Cyperaceae

### *Eriophorum angustifolium* Honck.

#### Common Cottongrass

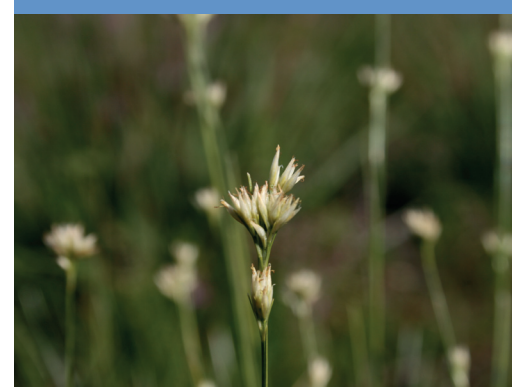
Native. Local. Stable. Axiophyte: bogs.

First record: Williams, c. 1800, 'bogs, common.'

Ubiquitous in M2 *Sphagnum fallax* in lowland mosses like Clarepool (Trueman, 1981), Wem and Whixall and upland sites like Rhos Fiddle. It also occurs in M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010) and Trefonen Marshes; M13 *Palustriella commutata* at Trefonen; M15 *Trichophorum germanicum* at Cramer Gutter; M16 *Sphagnum compactum* at Hodnet Heath; M22 *Juncus subnodulosus* at Sweeney Fen; M23 *J. effusus* at Rhos Fiddle; and M35 *Montia fontana* in Carding Mill Valley (R. Tapper, 1983).



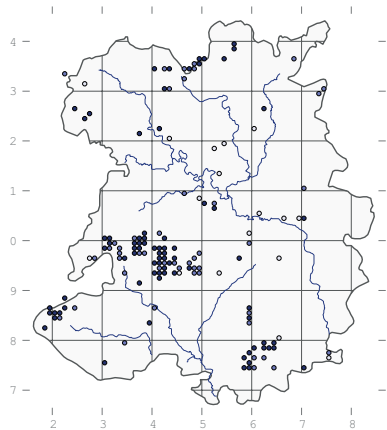
*Cladium mariscus* at Crose Mere



*Rhynchospora alba* at Wem Moss

It has also been recorded in a range of other habitats such as S27 *Comarum palustre* fen at the Moors, Ellesmere; W4 *Betula pubescens* woodland at Lin Can Moss; H9 *Deschampsia flexuosa* at Lower Short Ditch; and H12 *Vaccinium myrtillus* at Rhos Fiddle.

Although it has gone from some sites in the lowlands it has also colonised some new sites, such as a shallow pool in Lilleshall Quarry.



### *Eriophorum latifolium*

Hoppe

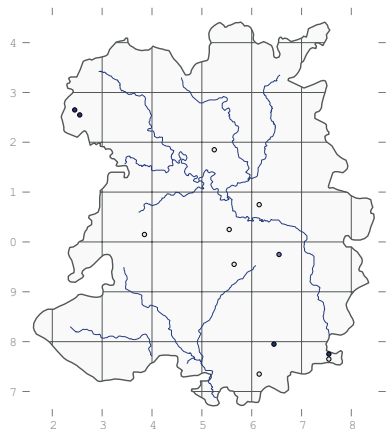
#### Broad-leaved Cottongrass

Native. Rare. Decreasing. Axiophyte: calcareous flushes.

First record: Williams, c. 1800, Mosterley and 'a boggy copse adjoining Vessons Wood'.

In calcareous flushes such as M10 *Carex dioica* at Shirlett Gutter and Trefonen Marshes (both Trueman, 1980 & 1981) and M13 *Palustriella commutata* at Trefonen. Other sites for it include Catherton Common, a flush in Longden Wood (J. Bingham, 2005) and Stapeley Hill (J. Clayfield, 2010).

In the past it was also known below Wenlock Edge at Easthope Wood (W. Beacall, 1886), at the base of the Wrekin (F. Dickinson, 1841), at Coreley (W. Corbett, 1841), and at Astley (E. Elsmere, 1841).



### *Eriophorum vaginatum* L.

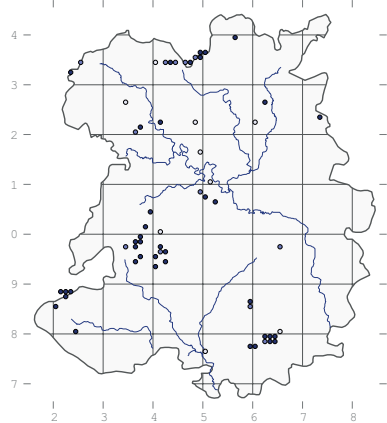
#### Hare's-tail Cottongrass

Native. Local. Stable. Axiophyte: bogs.

First record: G. Bowles, 1632, The Moors, Ellesmere (Howe 1650; Gibson 1695).

Most common on M2 *Sphagnum fallax* mire in places like Clarepool Moss, Wem Moss and Rhos Fiddle. It is also recorded in H12 *Vaccinium myrtillus* at Rhos Fiddle; M15 *Trichophorum germanicum* at Cramer Gutter; M16 *Sphagnum compactum* at Hodnet Heath; and W4 *Betula pubescens* woodland at Lin Can Moss and Wem Moss.

It has been lost from some lowland sites such as Bomere Pool (last seen by E.M. Rutter, 1956) but many new sites have been found recently, particularly in the uplands, and it has recently colonised a new site in an abandoned quarry at Poles Coppice.



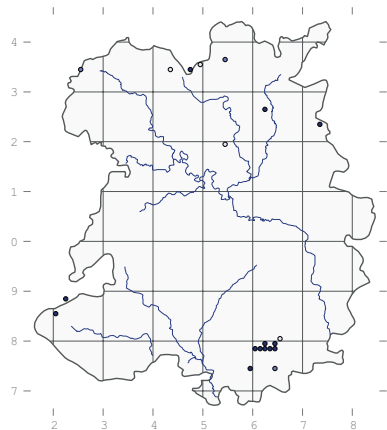
### *Trichophorum germanicum*

Palla

#### Deergrass

Native. Local. Decreasing. Axiophyte: moorland and lowland raised mires.

First records (as *Scirpus cespitosus*): Williams, c. 1800, Shawbury Heath and 'heath above Silvington'.



Locally abundant on some of the unimproved upland moors, in H9 *Deschampsia flexuosa* at Lower Short

Ditch and Catherton Common (Trueman, 1981) and M15 *Trichophorum germanicum* at Cramer Gutter.

Other current sites for it include Hodnet Heath, where it was first recorded by F. Rose in 1965, Rhos Fiddle (A. Hillman, 1992), Silvington Common, and Titterstone Clee (J. Bingham, 1986). At Wem Moss it turned up for the first time in 1998 in vehicle tracks made during scrub clearance.

### *Trichophorum cespitosum*

(L.) Hartman

#### Northern Deergrass

Collected at Twyford Vownog by Leighton in 1840 (det. G.A. Swan, BM, E) (Swan 1999).

### *Bolboschoenus laticarpus*

Marhold *et al.*

#### Sea Club-rush

Neophyte? Scattered. Stable. Ponds and lakes.

In recent years it has been found that Sea Club-rush (*B. maritimus* (L.) Palla) is actually two species. Most plants in inland sites have turned out to be *B. laticarpus*. *Bolboschoenus maritimus* was first recorded at Preston Montford by Sinker in 1957 but this has now been determined as *B. laticarpus* (SJ432143, F.J. Rumsey, 2011). At Oss Mere it was first recorded as *B. maritimus* in 2007 (F. McCullagh), so it is undoubtedly a recent introduction but this has been redetermined as *B. laticarpus* (SJ565438, M. Cousins, det. Rumsey, 2013).

*Bolboschoenus maritimus sensu lato* has also been recorded at Hawk Lake (W.E. Beckwith, 1882 and R.C. Palmer, 1951).

### *Scirpus sylvaticus* L.

#### Wood Club-rush

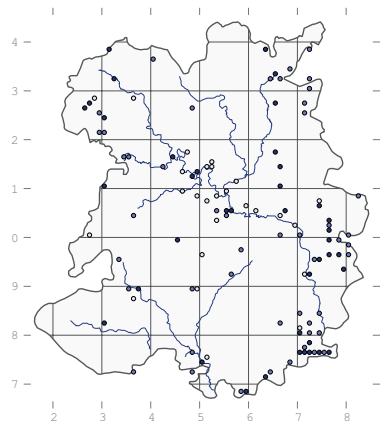
Native. Local. Decreasing. Axiophyte: rivers, swamps and wet woods.

First records: Williams, c. 1800, 'Betton pool; under Cronkhill; meadows about Duncote; side of the brook a little above Pitchford Forge; at the upper end of the water at Sundorn; above Woodhouse'.

In wet woods by rivers and in swamps in flood plains. It tolerates only partial shade, so it thrives in places where flooding keeps the tree cover thin. By the River Worfe at Beckbury it occurs in rather open W6d *Sambucus nigra* woodland, whereas at Birchen

Park it occurs in open W7 *Lysimachia nemorum* around springs.

There have been a few records of it in the Shrewsbury Canal since 1878 (H.L. Jones) and it currently grows in an abandoned canal basin at Wappenshall. Lowland: up to about 180 m at Walkmills (SO457994, D.H. Wrench, 1994).



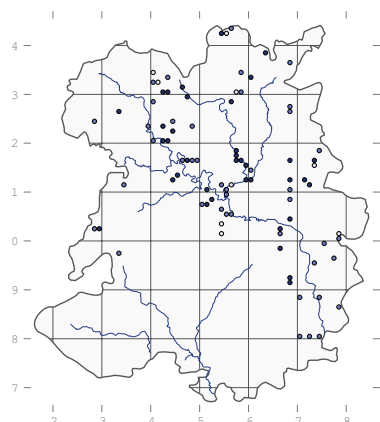
***Schoenoplectus lacustris* (L.) Palla**

**Common Club-rush**

Native. Local. Stable. Axiophyte: rivers, lakes and ponds.

First record (as *Scirpus lacustris*): Williams, c. 1800, 'ponds and pools.'

Occasional around the margins of some of the meres, including Alkmund Park Pool, Crose Mere and Fenemere, where it tends to occur on the deeper edge of *Phragmites australis* swamps. It is also found in rivers, especially the Roden, where it is often only present in the submerged form. Where it is the dominant plant, the vegetation community is S8 S. *lacustris* swamp, but this has not been recorded in any significant stands in the county. Elsewhere, it is occasionally planted in ponds and pools.



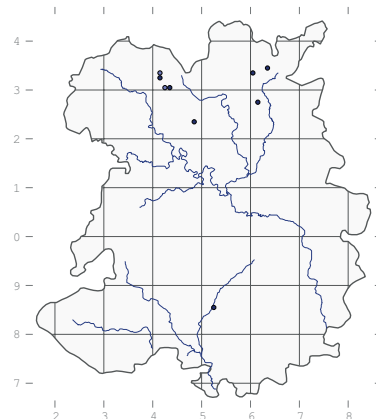
***Schoenoplectus tabernaemontani* (C.C. Gmel.) Palla**

**Grey Club-rush**

Native. Scarce. Stable. Axiophyte: meres and ponds.

First record: A. Ley, 1882, White Mere (BIRM).

Possibly native at Crose Mere (where it was first recorded by Sinker in 1960) and White Mere, but it has been declining at those sites and was last recorded in 2003 (Whild) and 1990 (C. Walker) respectively. In other sites, such as a pond by the Hodnet Bypass and Millennium Green at Moreton Say, it was probably planted.



***Eleocharis palustris* (L.) Röm. & Schult.**

**Common Spike-rush**

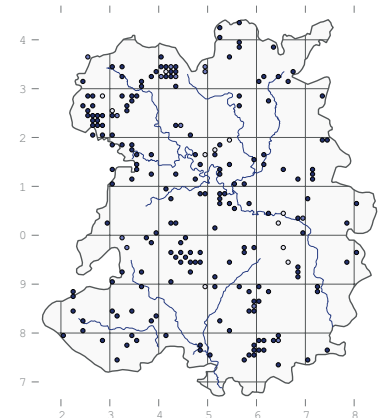
Native. Widespread. Stable. Ponds, lakes and rivers.

First record (as *Scirpus palustris*): Williams, c. 1800, 'common.'

On the margins of lakes and pools, where it sometimes forms stands of S19 *E. palustris* swamp, which is quite common in meres such as Crose Mere and Bomere Pool. It is also recorded in MG13 *Alopecurus geniculatus* grassland at Brown Moss (Trueman, 1983); M23 *Juncus effusus* at Bomere Pool and around a lake on Brown Clee (Trueman, 1981); M27 *Filipendula ulmaria* at Cole Mere; S9 *Carex rostrata* at Berrington Pool (M.J. Wigginton, 1979) and Wildmoor Pool (Trueman, 1981); S12 *Typha latifolia* in a pond near Black Coppice; S14 *Sparganium erectum* at Kettle Mere; and S27 *Comarum palustre* at Brown Moss (Trueman, 1983). Occasionally it is found on the margins of a river, as by the Roden at Rodenhurst in 1995.

It was also present in several abandoned canals, such as the Prees Branch between 1966 (Sinker) and 1978

(C.A. Paskell) and the Montgomery between 1958 (Sinker) and 1998 (R.V. Lansdown). Although it is largely a lowland plant, it is not restricted by altitude in this county, growing at 507 m in a pool on the summit of Brown Clee (SO59678668, 2004). Good places to look for it include Muxton Marsh and pools at Battlefield where it has been known since Leighton's time. *Eleocharis palustris* ssp. *vulgaris* Walters has been recorded at Black Marsh (Perring, 1962) and Brown Moss, and probably all plants in the county are that subspecies.



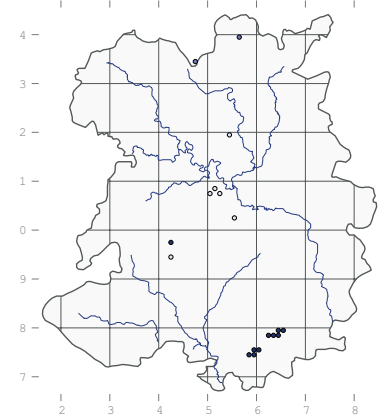
***Eleocharis multicaulis* (Sm.) Desv.**

**Many-stalked Spike-rush**

Native. Scarce. Stable. Axiophyte: bogs.

First records (as *Scirpus pauciflorus* or *multicaulis*): Williams, c. 1800, 'ditch on Shomere moss and on the moss on the south side of Bomere pool; north side of Berrington pool; upon a piece of ground called Mosterley, adjoining Cound Moor; Betton upper pool; on Shawbury Heath.'

In acid bogs, formerly in lowland sites such as the ones listed by Williams or, more recently, in places like Brown Moss (Sinker, 1965) and Wem Moss (F. Rose, 1959 – Sinker, 1970). It is now only found in upland sites around Titterstone Clee, such as Catherton Common (first recorded by E.M. Rutter in 1962) and Silvington Common (Trueman, 1998); and on the Long Mynd (W.E. Thompson, 1904 – A.K. Thorne, 2010).





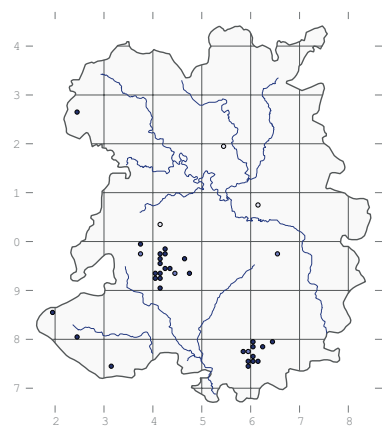
## *Eleocharis quinqueflora* (F. Hartmann) O. Schwarz

### Few-flowered Spike-rush

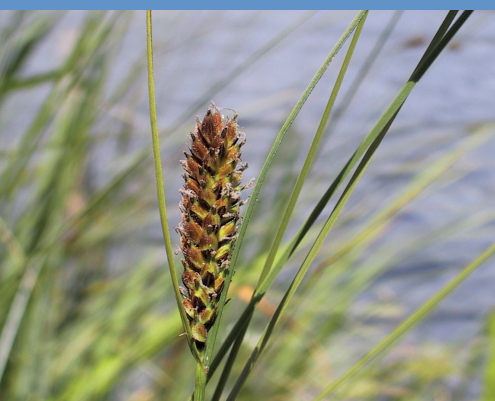
Native. Local. Stable. Axiophyte: flushes.

First record: Leighton, 1841, Shawbury Heath (SHY).

In base-rich flushes in M10 *Carex dioica* at Hope Bowdler (P. Eades, 2010), Shirlett Gutter (Trueman, 1980), Titterstone Clee (A.K. Thorne, 1999) and Trefonen Marshes; M13 *Palustriella commutata* at Trefonen; and M35 *Montia fontana* at Boiling Well (Trueman, 1980).



*Carex elongata* at Brownheath Moss



*Carex lasiocarpa* at Berrington Pool

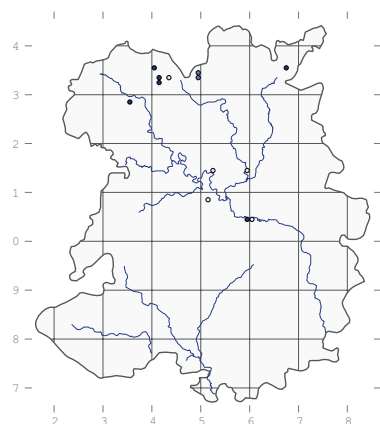
## *Eleocharis acicularis* (L.) Röm. & Schult.

### Needle Spike-rush

Native. Scarce. Stable. Axiophyte: lakes, canals and rivers.

First records (as *Scirpus acicularis*): Williams, c. 1800, 'on the south side of Betton upper pool; side of Cole Mere and Whitmere; by the side of the river Roden at Rodington Hall; on the east side of Mr Corbet's piece of water at Sundorn.'

Occasional on the margin of the Mere at Ellesmere, especially at SJ408351 (1997, BIRM) where the shore is least shaded, and White Mere (SJ414331, 2005), where the margins are kept clear by the actions of the sailing club. Other recent sites include the Montgomery Canal at Keeper's Bridge (SJ3528, R.V. Lansdown, 1998, BIRM), the banks of the Severn at Cressage (SJ595046, V. Howden, BIRM) and a pond near Market Drayton (SJ673351, M.S. Duffell, 2012).



## *Isolepis setacea* (L.) R.Br.

### Bristle Club-rush

Native. Local. Stable. Axiophyte: marshy grassland, flushes and pool margins.

First record (as *Scirpus setaceus*): Williams, c. 1800, 'sandy margins of pools, etc.'

In damp grassland and other wetlands such as MG5 *Festuca rubra* at Morton Pool; MG10 *Holcus lanatus* at Brown's Corner; M22 *Juncus subnodulosus* at Crose Mere (all Trueman, 1981; M23 *J. effusus* at Fenemere; M35 *Montia fontana* at Boiling Well (Trueman, 1980); OV26 *Epilobium hirsutum* at Bomere Pool; and both OV31 *Rorippa palustris* and OV35 *Lythrum portula* at Brown Moss.

## *Eleogiton fluitans* (L.) Link

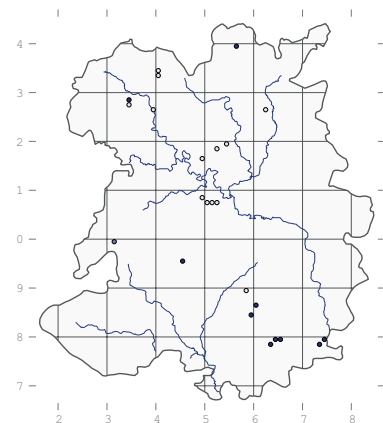
### Floating Club-rush

Native. Scarce. Decreasing. Axiophyte: bogs, streams, pools and lakes.

First record (as *Scirpus fluitans*): Williams, c. 1800, 'ditch on east side of morass between Queen's Head Turnpike and Woodhouse near Oswestry; on east side of Hencote pool; on north side of largest pool near Abbots Betton; in abundance in ditch on Shomere moss; in ditch on west side of Berrington pool; ditches about Ellesmere and Birch.'

In peaty streams and ditches, sometimes floating on the margins of mesotrophic lakes. In Boyne Water it grows in S10 *Equisetum fluviatile* swamp in open water and at Brown Moss it has been recorded in S27 *Comarum palustre* fen. Although it was once widespread in the meres and mosses, it is now rare in the lowlands. There are recent records of it in a peaty ditch in a field of pasture at Wootton (SJ343282, A.K. Thorne, 2003) and, when conditions are suitable, in various pools at Brown Moss.

Elsewhere it is known at Birchen Vallets and Lawley's Coppice in the Wyre Forest (J. Bingham, 2005 & 1995); at Cramer Gutter and another stream on Catherton Common (Bingham, 2008); in three pools on Brown Clee; and on Novers Hill on the Long Mynd (J. Clayfield, 2010).



## *Cyperus longus* L.

### Galingale

Native. Scarce. Increasing. Ponds and lakes.

First record: R.M. Stokes, 1997, Priorslee Flash.

Introduced in several ponds, as at Copthorne Park, where it grows in S6 *Carex riparia* swamp, or Birch Road Pond in Ellesmere, where it is found in W1 *Salix cinerea* carr. It is also planted in the Newport Canal in Newport (M. Richardson, 2001). Although it is native in Britain, it is only present as an introduction in Shropshire.

***Blysmus compressus* (L.)**

Panz. ex Link

**Flat-sedge**

Native. Rare. Last recorded in 1886. Fens.

First record (as *Schoenus compressus*): Williams, c. 1800, 'in a field at the bottom of Wenlock Edge, by the side of the road from Lutwyche to Kenley.'

A rare plant of calcareous flushes, known in just two places. Robert Serjeantson thought he had rediscovered Williams's site at Church Preen in 1878 (SHY), in a site later described by Beckwith as a 'bog below Lushcott' (possibly around SO5597). The other site was 'by the side of the brook which flows from Button Oak to Dowles Brook' (G. Jordan, c. 1850, conf. R. Maskew, WOS).

***Cladium mariscus* (L.) Pohl****Great Fen-sedge**

Native. Scarce. Declining. Axiophyte: fen, calcareous standing water.

The habitat for this species is peaty fenland with calcareous surface water. It has been recorded in nine sites in the county, but is probably now restricted to just four or five, and it is very rare except at Crose Mere.

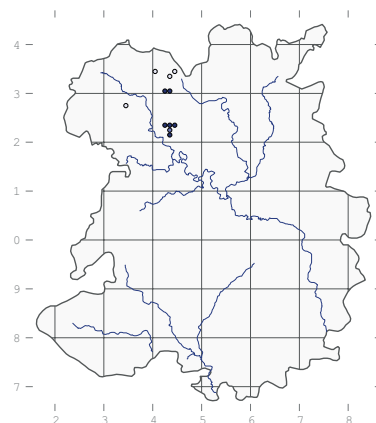
Edward Williams recorded it in abundance at Cole Mere (SJ4333) in about 1800, where it was subsequently seen by Henry Bidwell (conf. Leighton) in 1841, but not since then. Williams also had it at Rednal Moss (SJ3427).

J.E. Bowman first recorded it at Crose Mere (SJ4230) in 1836, where it has subsequently been seen many times. It was still locally frequent around the western half of the lake in 2003. In Diamond's Flora of Oswestry (1891) there is a record for the Mere at Ellesmere (SJ4034), made by the Oswestry & Welshpool Naturalists, but it has never been recorded there since.

William Phillips first recorded it at Berth Pool (SJ4223) in 1892, and it was also recorded there by Pat Parker in 1988. William Beacall saw it in a 'pool near Marton' in 1902 – possibly also Berth Pool.

In Sinker's Flora there is a record for 'Lyneal' that was apparently in Hamilton's manuscript Flora of 1913. This could be a reference to Cole Mere or perhaps to Lyneal Moss (SJ4334). In 1970 Sinker found it at Birchgrove Pool (SJ4323), where it has since been recorded by M.J. Wigginton (1980) and R.M. Stokes (1994).

W.V. Prestwood and C. Walker first recorded it at The Yesters (SJ4322) – a partially drained wetland in the Fenemere fens – where it was later seen by Parker & R.A. Dawes in 1993. A tiny clump of plants was revealed at Fenemere recently when a new fishing platform was installed.

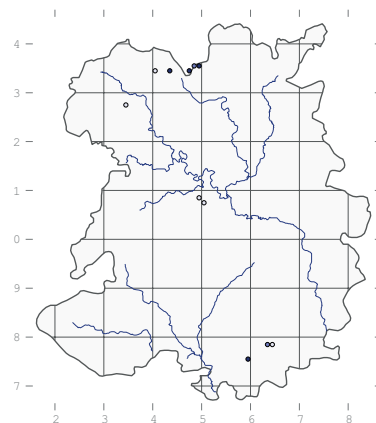
***Rhynchospora alba* (L.) Vahl****White Beak-sedge**

Native. Rare. Declining. Axiophyte: peat bogs.

First records (as *Schoenus albus*): Williams, c. 1800, 'on Shomere Moss near Condover; bogs near Ellesmere; Woodhouse, etc.'

The only recent sites are Wem Moss in 2004, where it was in M2 *Sphagnum cuspidatum* bog pools on the wettest parts of the mire, and Titterstone Clee (SO598750), where J. Bingham found one small patch in 1990.

Its populations are known to fluctuate with changing water levels, however. Other sites where it has been recorded are Bomere Pool (J. Evans, 1805 – R.M. Serjeantson, 1881), Catherton Common (G. Jordan, 1856 – J.B. Duncan, 1903), Clarepool Moss (Serjeantson, 1880 – A. Hearle, 1987), Rednal Moss (Leighton, 1834), Shomere Moss (Serjeantson, 1878), the Mere at Ellesmere (A. Bloxham, 1841) and Whixall Moss (J.E. Bowman, 1841 – F.H. Perring, 1989).



[*Rhynchospora fusca* (L.) Aiton f., Brown Beak-sedge]

Leighton (1841, p. 36) gave a record of this at Bomere Pool, attributed to Williams, but that record is not in Williams's manuscript, and Leighton (ibid., p. 508) later withdrew it, pointing out that it had been communicated to him in error by Thomas DuGard. Phillips (1878) repeated the record without attribution or the correction.]

***Carex paniculata* L.****Greater Tussock-sedge**

Native. Local. Stable. Axiophyte: rivers, canals, meres and woods.

First record: Williams, c. 1800, 'ditches around Shineton, Halston and Hardwick; Crose Mere, 'between Beckbury and Ruyton', Sandford Pool and 'under the Stiperstones.'

Characteristic of two particular communities: S3 *C. paniculata* swamp, which forms on the edges of meres such as Fenemere (C. Walker, 1988), Marton Pool, Chirbury, and Sweat Mere (B.D. Wheeler, 1986), and W5 *Alnus glutinosa* woodland, which is found around many of the meres and along some of the peaty river valleys such as the Bailey Brook at Millenheath Bridge.

It is also recorded in MG10 *Holcus lanatus* at Fenemere (Walker, 1988); M4 *Carex rostrata* at Clarepool Moss; M22 *Juncus subnodulosus* at Crose Mere and M27 *Filipendula ulmaria* at Crose Mere. In reedbeds it is found in S4 *Phragmites australis* at Oss Mere and Sweat Mere (both M.J. Wigginton, 1979); S24 *Calamagrostis canescens* at Fenemere; and S26 *Phragmites australis* at Marton Pool, Chirbury, and Sweat Mere (M.J. Wigginton, 1979). It sometimes persists in more eutrophic W6 *Salix* × *fragilis* woodland around meres such as Marton Pool, Chirbury (Wigginton, 1979) and Morton Pool.

Elsewhere it is often found perching on the margins of canals such as the Llangollen Canal at Blake Mere or along rivers as high as the headwaters of the Clun at Riddings, up to about 410 m (SO190861, R. Smith, 2003). A good place to see it is at Sweat Mere, where it was first recorded by A.R. Clapham in 1938, and subsequently described by Tansley (1939) in his classic description of the hydrosere there; however, that site is not very accessible, and it is easier to get to the Prees Branch Canal or the Montgomery Canal at Aston Locks.

## *Carex* × *boeninghausiana*

Weihe (*paniculata* × *remota*)

Native. Rare. Stable. Canals and wet woodland.

First record: Sinker, 1973, Prees Branch Canal.

Recorded recently in W5 *Alnus glutinosa* woodland at Trefonen Marshes (SJ246265, P. Lukey, 2002, BIRM), Cole Mere (SJ432334, 2007, BIRM) and Crose Mere (SJ426306, 2013, BIRM).

## *Carex diandra* Schrank

### Lesser Tussock-sedge

Native. Rare. Last recorded in 1956. Fens and ditches.

First record: Williams, 1798, 'by the side of Shomere Pool.'

This species has curiously declined to extinction, apparently, despite no obvious loss of its habitat. In the past it was recorded at Bomere Pool, Cole Mere, Crose Mere, Hencott Pool, Shomere Pool, the Mere and in places on the Weald Moors, near Oswestry and Whitchurch, and at Whixall. Some of the records are supported by voucher specimens (e.g. Leighton's plant from Bomere Pool, 1835, at BON and CGE) so there is no doubt that it was once present. It has declined throughout the Midlands, so maybe it is particularly sensitive to drainage and succession. The last records date from 1956, when A.M. Stirling recorded it at the Mere and at Whixall.

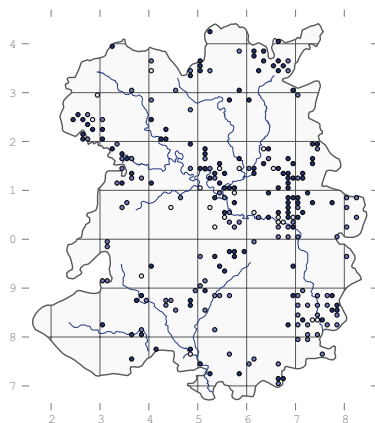
## *Carex otrubae* Podp.

### False Fox-sedge

Native. Local. Stable. Ponds, canals, damp grassland.

First record: Williams, 1800, 'sides of pools and ditches, and canals.'

In wet hollows in grassland and swamps, in MG5 *Festuca rubra* at the Ercall; S18 *C. otrubae* on the margins of the pool at the Speller; and S26 *Phragmites australis* in the old Shrewsbury Canal at Wappenshall. It grows in calcareous situations such as pools on the floor of limestone quarries at Llanymynech and Lilleshall, and in the more neutral fen peats of the Weald Moors, but it tends to avoid the more acid soils. Lowland: up to about 250 m at Mogg Forest. A good place to look for it is Granville Country Park and the adjacent Muxton Marsh; it used to grow in the car park at Battlefield Church until the site was tidied up, but it will probably return if any wet hollows remain.



## *Carex* × *pseudoaxillaris*

K. Richt. (*otrubae* × *remota*)

Native. Rare. Stable. Canals and marshy grassland.

First record: W.P. Brookes, 1834, 'side of canal, Madeley.'

The only recent record is from the Ercall, in an old quarry where it was growing in MG6 *Cynosurus cristatus* grassland going over to M23 *Juncus effusus* rush-pasture (SJ64280950, Whild, 2006, conf. M.S. Porter, BIRM). It has persisted there for several years.

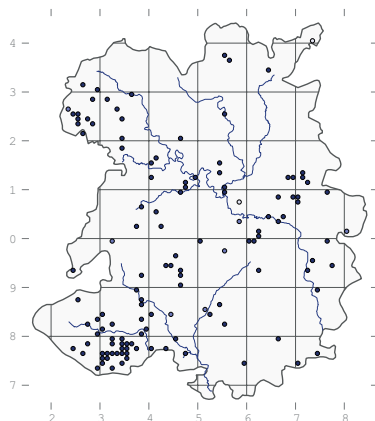
There are some old records for the county. Sinker (1985) reports one from near Pitchford by D. Turner (Dawson Turner, c.1805) and another by J. Ball from Shrewsbury in 1887. Miss Lloyd collected it from Llyncllys Pool in 1871 but her herbarium is lost. The only confirmed historical record is by E. Cleminshaw and J.B. Duncan from 'a disused canal near Neen Sollars' (presumably the Leominster Canal at Marlbrook) on 22<sup>nd</sup> June 1897 (conf. M.S. Porter, SHYB).

## *Carex spicata* Huds.

### Spiked Sedge

Native. Local. Increasing. Axiophyte: grassland.

First record: Anon., 1888, Dorrington, by the road to Condoer (SHY).



*Carex spicata* was hardly recorded in Sinker's Flora, but has been reliably identified in many places since then. Whether this amounts to an increase or not is uncertain. It grows in a variety of neutral grasslands, from MG1e *Centaurea nigra* at Blackfriars Meadow to MG5 *Festuca rubra* on Windmill Hill. It is often found on road verges, especially around Clun.

## *Carex muricata* L. ssp. *muricata*

### Scarce Prickly-sedge

Native. Rare. Stable. Axiophyte: calcareous grassland.

First record: Whild, 1999, Jones's Rough.

This nationally rare subspecies occurs in Shropshire only on Moelydd, near Oswestry. It was first found at Jones's Rough, a small reserve belonging to the Shropshire Wildlife Trust, where it occurs in a patch of open limestone scree occupying an area of approximately 10 m × 10 m (SJ24772483), with about 100 plants in total. It was later (in 2000) found around the summit of Moelydd, a few hundred yards from the original site. There are some 1,000 plants in fifteen discrete populations, mostly growing on loose scree on the edges of ancient mine pits at an altitude of about 260 m. It grows well in cultivation, producing vigorous clumps that persist for a few years and produce plenty of viable seed; but it cannot tolerate shade or competition, and it only colonises bare ground. At Jones's Rough it often occurs immediately below *Taxus baccata* trees, on bare soil, and thrives for a while when they are pollarded or felled, but dies out again when the canopy becomes too dense. In the mining rubble on Moelydd there are few immediate associates, possibly because of the influence of heavy metals in the rocks. The surrounding vegetation is CG2d *Avenula pubescens* grassland, *Dicranum scoparium* subcommunity.

## *Carex muricata* L. ssp. *pairei* (F.W. Schultz) Čelak.

### Prickly Sedge

Native. Local. Stable. Axiophyte: upland grassland and woodland edge.

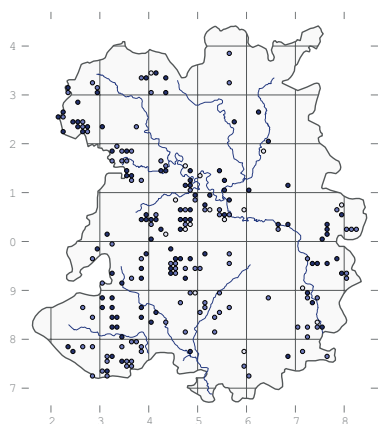
First record: Leighton, 1835, Upper Berwick (det. S.M. Walters & P.D. Sell, SHY).

Primarily in upland grassland, although it is also found in scattered locations in the lowlands. Typical sites for it include Earl's Hill, where it is abundant in U4 *Agrostis capillaris*



around the hill fort on the summit, at an altitude of about 300 m, and Old Oswestry, where it grows in W23 *Rubus fruticosus* scrub.

It is recorded in numerous places on the Long Mynd, Haughmond Hill, Hope Bowdler, Lyth Hill and Sharpstones Hill. It avoids more acid rocks such as the Stiperstones quartzite, but it does occur on the Carboniferous Limestone, on Llyncllys Hill in particular. In the lowlands it favours sandy soils in places such as Stanton on Hine Heath and Hatton Grange.



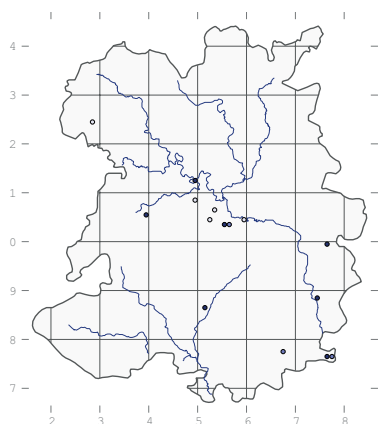
### *Carex divulsa* Stokes

#### Grey Sedge

Native. Scarce. Increasing. Gardens, roadsides and woodland rides.

First record: Williams, c. 1800, 'ditch bank on the S.E. side of the Cloud Coppice near Berrington.'

There are recent records for the side of a track in Badger Dingle (R.M. Stokes, 1997), a garden in Aston Munslow (M.B. Fuller, 1998), along a path in Dudmaston Dingle, Nills Hill Quarry (M.S. Duffell, 2008), by a path at Stevenshill, and (unbidden) in the front garden of a house in Albert Street, Shrewbury. All plants are *C. divulsa* ssp. *divulsa*.



### *Carex disticha* Hudson

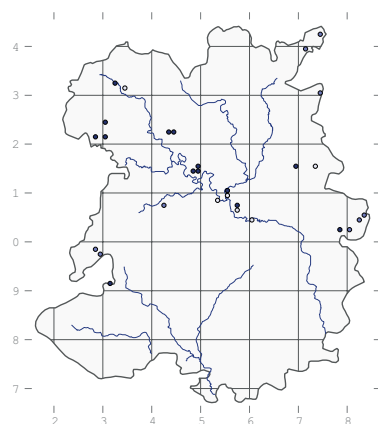
#### Brown Sedge

Native. Local. Decreasing. Axiophyte: fens and swamps.

First record (as *C. intermedia*): Williams, c. 1800, 'meadows under Cronkhill, on the banks of the river Tern, and between Halston and Hardwick.'

Confined to hollows in river floodplains, where it grows in species-rich sedge swamps such as M22 *Juncus subnodulosus* at Crofts Mill (C. Walker, 1994) and S7 *Carex acutiformis* in the Old River Bed.

There are also recent records for Attingham Park (Walker, 2005), Donnington (I. Diack, 2009), Eyton Farm (M. Cousins, 2008), Fenemere, Fernhill Pastures (Cousins, 2007), Hoo Farm (A.K. Thorne, 2003), Llwyntidman (Thorne, 2003), Lower Broughton (D.L. Buckingham, 1999), Morton Pool (D.H. Wrench, 1991), Rhydwith Farm (Thorne, 2003) and Whiston Meadows (Walker, 1995). Most of these sites are in farmland, usually in permanent pasture, and they are easily missed owing to difficulty of access and levels of grazing, but some new sites have been found recently during surveys for agricultural extensification schemes. However, there has probably been a long term decline as a consequence of drainage and intensification. It is strictly lowland, up to about 150 m at Lower Broughton.



### *Carex remota* L.

#### Remote Sedge

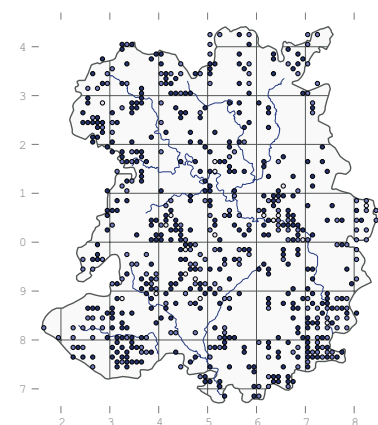
Native. Widespread. Stable. Wet woods and ditches.

First record: Williams, c. 1800, 'moist ditch banks and moist woods around Eaton Mascott and Battlefield.'

Most characteristic of W5 *Alnus glutinosa* woods in many places around the meres and in river valleys. It is also recorded in W6 *Salix* × *fragilis* in places

like the Borle Brook at Defford and the Alders at Wollaston; W7 *Lysimachia nemorum* at Birchen Park and Limekiln Wood (Trueman, 1981); W8 *Fraxinus excelsior* woods at Chorley Covert, Redhill Coppice (Trueman, 1981) and under The Ercall; W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* at Bannister's Coppice and Haughmond Hill.

It is less common outside woods, but it is recorded in poorly-drained MG5 *Festuca rubra* grassland in quarries on The Ercall; M23 *Juncus effusus* at Brook Vessons; and ditches of S28 *Phalaris arundinacea* at Hendre. It is recorded as high as 385 m at Brook Vessons.



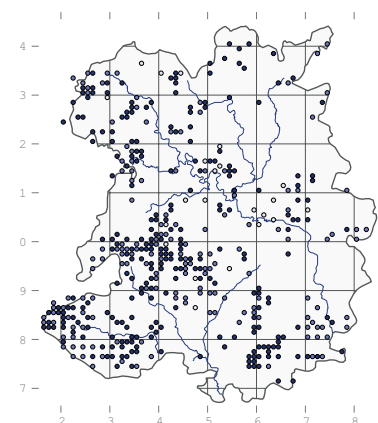
### *Carex leporina* L.

#### Oval Sedge

Native. Local. Stable. Marshy grassland.

First records (as *C. ovalis*): Williams, c. 1800, 'Boggy grounds around Eaton, Sundorn, etc.'

Occasional in damp grassland, including MG5 *Festuca rubra* at Ruewood and Lubberland (D.H. Wrench, 1995); MG6 *Cynosurus cristatus* at Meverley Farm; MG8 *Caltha palustris* at Meverley Farm and Ruewood; and MG9 *Deschampsia cespitosa* at Cole Mere. It is also recorded in M23 *Juncus effusus* at Meverley Farm, Paulith Bank (Trueman, 1981) and Ruewood; and M24 *Cirsium dissectum* at Cole Mere.

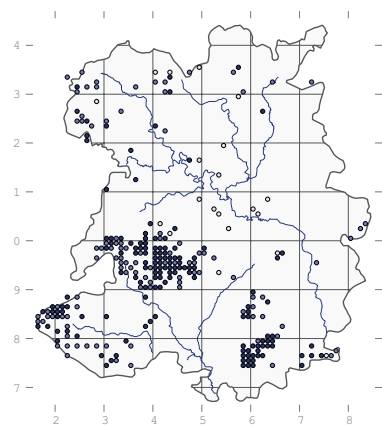


***Carex echinata* Murray****Star Sedge**

Native. Local. Decreasing. Axiophyte: wet heaths and flushes.

First record: Williams, c. 1800, 'boggy grounds around Eaton Mascott.'

Characteristic of M6 *C. echinata* on the Stiperstones and Stapeley Hill (both Trueman, 1981), but also recorded in upland flushes, wet heath and grassland such as MG5 *Festuca rubra* in Townbrook Hollow; M10 *Carex dioica* at Hope Bowdler (P. Eades, 2010), Titterstone Clee (A.K. Thorne, 1999); M13 *Palustriella commutata* at Caer Caradoc (R. Meade, 2010) and Hope Bowdler (P. Eades, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* on Hope Bowdler (Eades, 2010); M23a *J. acutiflorus* on Stapeley Hill (Trueman, 1981) and the Stiperstones; and M35 *Montia fontana* at Boiling Well (Trueman, 1980). It also grows in H12 *Vaccinium myrtillus* heath at Rhos Fiddle. In the lowlands it is usually found in base-rich fens such as those at Morton Pool, Trefonen Marshes and Crose Mere, but it has gone from quite a few sites, especially around the meres. The upland populations are more stable, and it is still abundant on all the higher hills, and typically in more acid habitats. Good places to look for it include Hopesay Hill (first recorded by A. Feest in 1976), Stapeley Hill (Perring, 1975) and Hope Bowdler (W.E. Thompson, 1904).

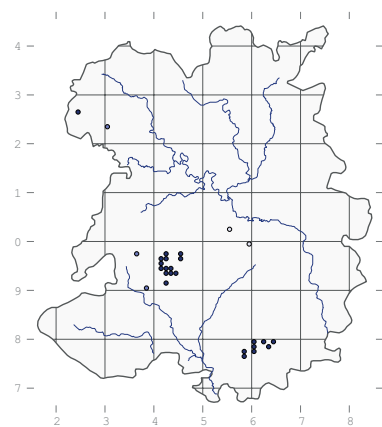
***Carex dioica* L.****Dioecious Sedge**

Native. Local. Stable. Axiophyte: flushes.

First record: Williams, c. 1800, 'on Cound Moor.'

In flushes on the hills, usually in M10 *Carex dioica* in batches on the Long Mynd, Titterstone Clee (A.K. Thorne, 1999) and Trefonen Marshes; M13

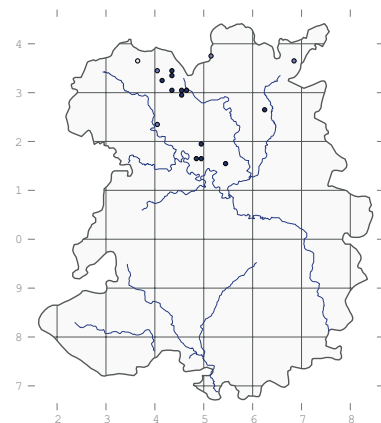
*Palustriella commutata* at Trefonen; and M15 *Trichophorum germanicum* at Cramer Gutter (Sinker, 1979). It has declined in the lowlands, having apparently been lost from Cound Moor, Morton Pool (C. Walker, 1981) and near Rowley (W.P. Brookes, 1841). Other sites with no recent records include a flush at The Knolls (J.A. Warren, 1980) which was drained in the 1980s, another at Asterton on the edge of the Long Mynd (Warren, 1980), and Cramer Gutter, where it was last seen by Wigginton in 1981. Sinker (1984) had only four current sites, but he considered it under-recorded and it has subsequently turned up in numerous places on the Long Mynd since it was first found by Walker on Wild Moor in 1987, and in several places around Titterstone Clee since it was spotted by J. Bingham in 1986. There are therefore many more sites for it than previously, but this is unlikely to represent a real increase. Good places to look for it include Bilbatch, Gogbatch and Townbrook Hollow.

***Carex elongata* L.****Elongated Sedge**

Native. Scarce. Stable. Axiophyte: alder carr.

First record: J.E. Bowman, 1840, 'north-east side of Cole Mere just below the point where the Ellesmere Canal leaves the direction of the mere' (BM, SHY).

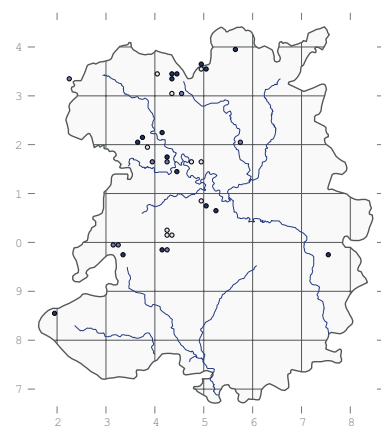
Almost entirely restricted to W5 *Alnus glutinosa* woodland in old mires, often on the margin of meres. It is currently known only at Brownheath Moss, Cole Mere, Haughmond Abbey Wood, Hencott Pool, Preston Coppice, Sweat Mere, Towery Moss, Tunstall Wood and White Mere. Seedlings often occur on rotting logs which keep them above the surface of a fluctuating water level. The canal populations, which grew on the old wooden piles along the banks, disappeared in about 1977 when these were mostly replaced by metal sheeting.

***Carex canescens* L.****White Sedge**

Native. Local. Decreasing. Axiophyte: peat bogs.

First records: Williams, c. 1800, Alkmund Park Pool, Hencott Pool and Snipe Bog.

On lowland raised mires, typically in M2b *Sphagnum fallax* lawns in places like Clarepool Moss and Snipe Bog and M4 *Carex rostrata* on Clarepool Moss. It persists in W4 *Betula pubescens* woodland on Calcott Moss, Clarepool Moss and Lin Can Moss and W5 *Alnus glutinosa* at Shomere. The upland populations are less well studied, but on the edge of Shelve Pool it is recorded in S12d *Typha latifolia* swamp (Trueman, 1981), and it is recorded as high as 325 m at Lower Darnford (SO417980, A.K. Thorne, 1999), where it was first recorded by R.D. Benson in 1893.

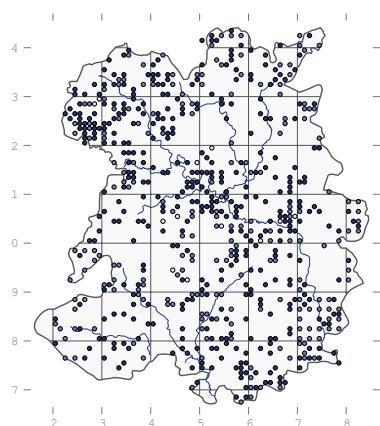
***Carex hirta* L.****Hairy Sedge**

Native. Widespread. Stable. Grassland and wetland.

First record: Williams, c. 1800, 'sides of pools and moist meadows, and sandy lanes.'

Common in grasslands such as MG1 *Arrhenatherum elatius* at Blackfriars field, Shrewsbury; MG4 *Sanguisorba officinalis* at Lord's

Meadows (Trueman, 1981); MG5 *Festuca rubra* at Haughmond Hill meadow, Ruewood Pastures and elsewhere; MG8 *Caltha palustris* at Crose Mere, Meverley Farm, Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* at Oss Mere; MG10 *Holcus lanatus* at Broncroft, Brown's Corner and Larkfield Farm (both Trueman, 1981), Old Oswestry and Fenemere; and MG13 *Alopecurus geniculatus* on a pool margin at Brown Moss (Trueman, 1983). It is common in fen-meadows such as M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991), Sweeny Fen and Trefonen Marshes; M23 *Juncus effusus* on Haughmond Hill, Meverley Farm, Ruewood and Fenemere; and M27 *Filipendula ulmaria* at Berrington Pool and Tunstall Wood. On the margin of Fenemere it has been recorded in OV31 *Rorippa palustris* vegetation (M.J. Wigginton, 1979) and at Cole Mere it grows in S26 *Phragmites australis* fen in a drainage ditch. Generally lowland, but up to about 470 m in the quarry on Titterstone Cleve (SO5977, N. Button, 2006).



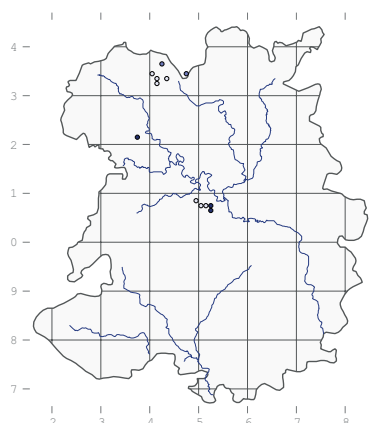
### *Carex lasiocarpa* Ehrh.

#### Slender Sedge

Native. Rare. Decreasing. Axiophyte: bogs and meres.

First record (as *C. filiformis*): Williams, c. 1800, 'Berrington, Bomere and Shomere pools; bogs about Ellesmere; Ellesmere Meer; Whitemere.'

There are just three current sites. At Berrington Pool it occurs around the western and northern sides of the pool amongst stands of S9 *C. rostrata* (M.J. Wigginton, 1979), S12 *Typha latifolia* and S27 *Comarum palustre* fen; whereas at Lin Can Moss and Snipe Bog it grows in M2 *Sphagnum fallax* mire (I. Diack, 2008 and 2004). In the past it was known at several other meres, including Bomere Pool until 1906 (T.J. Foggitt); Cole Mere until 1882 (A. Ley); and Wem Moss until 1962 (Sinkler).

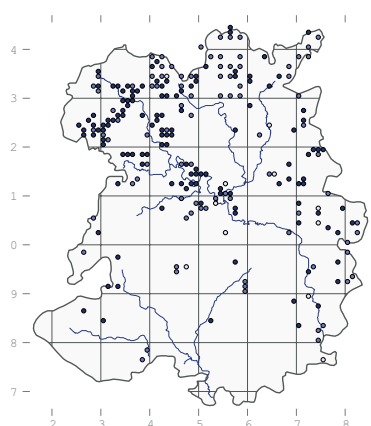


### *Carex acutiformis* Ehrh.

#### Lesser Pond-sedge

Native. Local. Stable. Swamps, fens, canals, river banks and wet woods.

First records (as *C. paludosa*): Williams, c. 1800, 'ditches under Cronkhill; about Ruyton, near Baschurch.'



Most characteristic of swamps, where it forms almost pure stands of S7 *C. acutiformis* swamp over large areas in sites like the Old River Bed; and W5 *Alnus glutinosa* woods, where it is often equally abundant in sites like Crose Mere, Fenemere, Oss Mere and Sweat Mere.

Elsewhere, it is recorded in MG8 *Caltha palustris* grassland at Crofts Mill (C. Walker, 1994); M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991), Sweeny Fen and elsewhere; M27 *Filipendula ulmaria* at Black Coppice; OV26 *Epilobium hirsutum* at the Old River Bed; OV31 *Rorippa palustris* on the margin of Fenemere (M.J. Wigginton, 1979).

In other swamps, it is found in S3 *Carex paniculata* at Fenemere (Walker, 1988); S10 *Equisetum fluviatile* in the Old River Bed; S24 *Calamagrostis canescens* at Fenemere; S26 *Phragmites australis* at Fenemere, Marton Pool, Chirbury (Wigginton, 1979) and Oss Mere; and S27 *Comarum palustre* at Bomere and Shomere Pools (both Wigginton, 1979). It is also sometimes

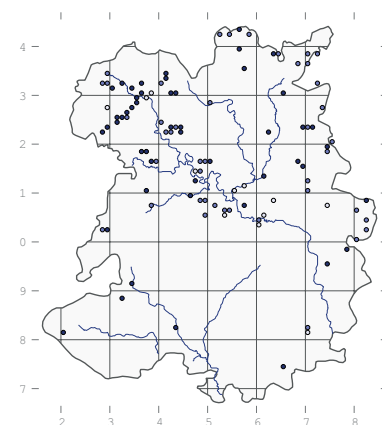
found in W6 *Salix × fragilis*, as at Blake Mere and Marton Pool, Chirbury.

### *Carex riparia* Curtis

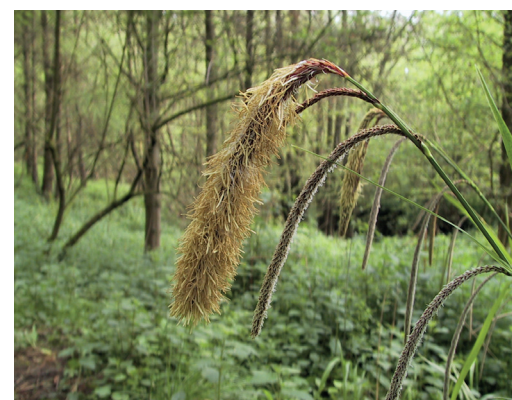
#### Great Pond-sedge

Native. Swamps, fens, canals, rivers and wet woods.

First records: Williams, c. 1800, 'banks of Tern near Duncote; side of Marton Pool near Chirbury; by Rednal Mill/near Hordley.'



This is the largest species of sedge in Britain, with leaves up to 39 mm wide and nearly 2 m in length (at Brown Moss, SJ56463939, in 2006). It is sometimes abundant on peaty soils around the meres and is recorded in OV30 *Bidens tripartita* at Marton Pool, Chirbury (M.J. Wigginton, 1979); S3 *Carex paniculata* at Sweat Mere (B.D.



*Carex pendula*



*Carex pilulifera* (Dan Wrench)



Wheeler, 1986); S6 *C. riparia* at Blake Mere (Wigginton, 1979) and Fenemere; S13 *Typha angustifolia* at Marton Pool; S24 *Calamagrostis canescens* at Fenemere; and S26 *Phragmites australis* at Marton Pool (Wigginton, 1979).

It is also tolerant of shade and is often abundant in woods such as W5 *Alnus glutinosa* at Fenemere (Wigginton, 1979); and W6 *Salix* × *fragilis* at Marton Pool and Redhill Coppice.

Sinker (1985) considered it to be absent from the uplands, but it has now been found in a few sites in the south-west of the county, such as Bettws Pool (SO203812, J. Clayfield, 2002), at 391 m.

### *Carex pseudocyperus* L. Cyperus Sedge

Native. Local. Stable. Axiophyte: ponds, bogs, wet woodland and canals.

First records: Williams, c. 1800, 'ponds and ditches. Around Golden, Sundorn, Mare Pool near Shrewsbury; between Battlefield and Shrewsbury; Hencot pool; canal between Uffington and Shrewsbury.'

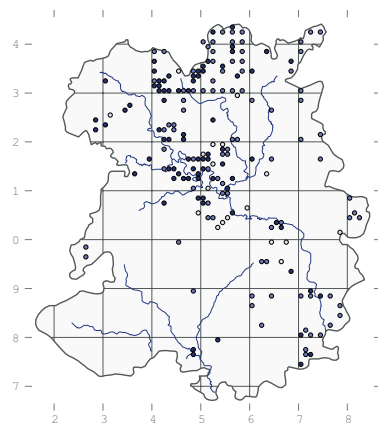
In a variety of wetland habitats often on the margins of ponds and meres, but also in a variety of woodland types. At Brown Moss it occurs in MG10 *Holcus lanatus*; OV31 *Rorippa palustris* in the drawdown zone around shallow pools; S12 *Typha latifolia*; S14 *Sparganium erectum*; and S27 *Comarum palustre* fen. Seeds germinate rapidly on expanses of bare mud left behind by receding water levels, and it can persist in the shade of tall swamps and even willow woodland.

Elsewhere it is recorded in M23 *Juncus effusus* at Oxon Pool; S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S12 *Typha latifolia* at Battlefield and Shrawardine Pool; and S24 *Calamagrostis canescens* at Oss Mere (M.J. Wigginton, 1979). The only places where S17 *Carex pseudocyperus* swamp has so far been recorded are Shrawardine Pool and Oxon Pool.

It is quite common in woods, including W1 *Salix cinerea* at Shomere Pool and Calcott Moss; W4 *Betula pubescens* at Bomere Pool (Wigginton, 1979); W5 *Alnus glutinosa* at Cole Mere, Haughmond Abbey Wood, Oss Mere, Oxon Pool and White Mere; and W6 *Salix* × *fragilis* at Cole Mere, Hencot Pool and the Mere.

It has been known along the Llangollen Canal since 1880 (W.E. Beckwith) and it is still found at Platt Lane and by the Prees Branch Canal. It was recorded by the Shrewsbury Canal between 1832 (C.C. Babington & Leighton) and 1939 (J.B. Johnson) but not since. Despite

being fairly common in the floodplains, it tends to avoid the banks of the larger rivers, although it does sometimes grow on the stone embankments of the Severn in Shrewsbury. Lowland, but at 300 m or higher on Brown Clea (SO6086, M.G. Jones, c. 1984).



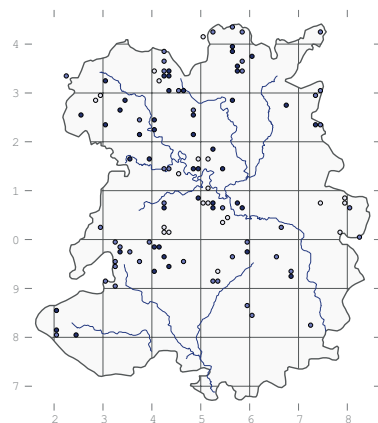
### *Carex rostrata* Stokes Bottle Sedge

Native. Local. Stable. Axiophyte: bogs, fens and open water.

First records (as *C. ampullacea*): Williams, c. 1800, 'Berrington, Cound, Shomere; Shrawardine and Hencot pools; Oxon pool.'

In bogs and pools, being the dominant and characteristic plant of M4 *C. rostrata* on the margins of mires like Clarepool Moss and Snipe Bog, and S9 *C. rostrata* swamps in oligotrophic lake such as Berrington and Wildmoor pools.

Elsewhere, it is common in M2 *Sphagnum fallax* lawns in places like Lin Can Moss and Snipe Bog; M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991); M23 *J. effusus* at Rhos Fiddle; S12d *Typha latifolia* at Berrington Pool, Brown Moss and Brownheath Moss; S14 *Sparganium erectum* at Berrington Pool; S27 *Comarum palustre* at Berrington Pool (M.J. Wigginton, 1979), Brown Moss (Trueman, 1983) and Shrawardine Pool; and W4 *Betula pubescens* woodland at Lin Can Moss.



### *Carex* × *involuta* (Bab.) Syme (*Carex rostrata* × *vesicaria*)

Native. Rare. Stable. Marshes.

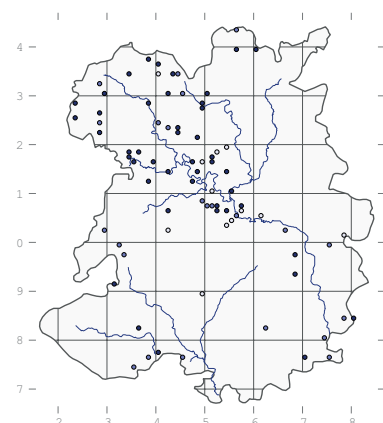
Charles Sinker recorded this hybrid at Black Marsh in 1958 and at Brown Moss in 1959, without collecting specimens. Both *C. rostrata* and *C. vesicaria* occur in abundance at Brown Moss, but the latter in particular goes into decline if there is too much scrub. Following clearance work around Pool 5 in 2000/2001 large stands of sedge grew up, some of which were very shy to flower but had stomata on both leaf surfaces. Plants collected in 2006 (SJ56223963) and grown in cultivation produced abortive fruits in 2008 and have been confirmed as this hybrid (A.O. Chater, BIRM).

### *Carex vesicaria* L. Bladder Sedge

Native. Local. Stable. Axiophyte: swamps and fens.

First record: J. Evans, 1805, 'wet field near Battlefield.'

In marshy grassland, damp hollows in fields, shallow pools, ditches, stands of tall herb around the meres, and sometimes persisting for a short while in wet woodland. Where abundant it forms S11 *C. vesicaria* swamp in places like the Long Bog and Brown Moss. It is also recorded in MG10 *Holcus lanatus* at Ruewood Pastures; M22 *Juncus subnodulosus* at Crose Mere; M23 *J. effusus* at Ruewood; OV26 *Epilobium hirsutum* at Berrington Pool (M.J. Wigginton, 1979); and W6 *Salix* × *fragilis* at Marton Pool, Chirbury. A good place to see it is in a pool at Battlefield, where it has been known for over 200 years.

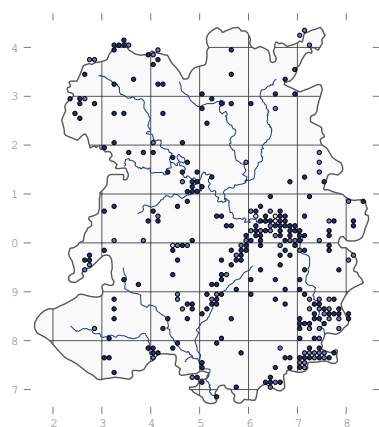


***Carex pendula* Hudson****Pendulous Sedge**

Native. Widespread. Increasing. Woods, riverbanks, gardens, waste ground.

First record: J. Stokes, 1787, 'wood between Buildwas Inn and the Birches.'

This is a native species that is doing rather well, for some reason. It is spreading in base-rich woods, where it sometimes becomes overwhelmingly abundant. It is recorded in W7 *Lysimachia nemorum* woodland at Fastings Coppice; W8 *Fraxinus excelsior* all along Wenlock Edge and elsewhere; and W10 *Quercus robur* at Bannister's Coppice. It is also a frequent escape from cultivation in towns.

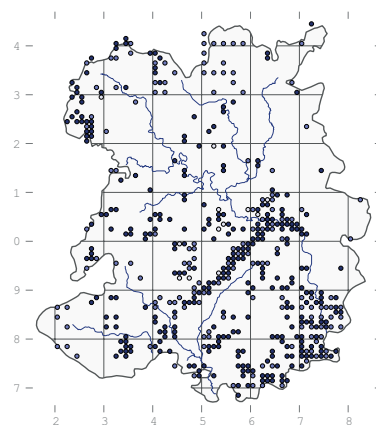
***Carex sylvatica* Hudson****Wood Sedge**

Native. Local. Stable. Axiophyte: woods.

First record: Williams, c. 1800, 'woods, common.'

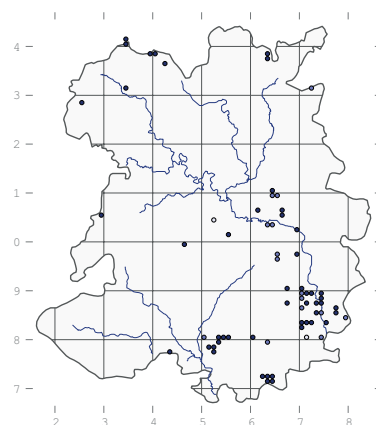
In ancient woods on base-rich soils, often most frequent along paths and rides where there is more light and soil disturbance. It is invariably present in W8 *Fraxinus excelsior* woods, especially along Wenlock Edge and in the Oswestry Uplands. It is also recorded in W7 *Lysimachia nemorum* at Fastings Coppice and Limekiln Wood (Trueman, 1981); W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* in Bannister's Coppice. Sometimes it is found in grassland adjacent to woods, such as MG1e *Arrhenatherum elatius* and MG5 *Festuca rubra* at Ropewalk Meadow. It often colonises the edges of abandoned limestone quarries such as Dolgoch, Lea and Llynclys (P. Parker, 1993) and shady parts of churchyards such as those in Bishops Castle and Monkhoppton. It is mainly lowland, growing up to about 450 m in woods

around Boyne Water (SO599848, M.L. Morris, 1998). Plants growing in open marsh near a stream at Nant-isaf (SJ254344, 2011) were up to 136 cm tall, which is well above the norm for this species.

***Carex strigosa* Hudson****Thin-spiked Wood-sedge**

Native. Local. Increasing. Axiophyte: damp, calcareous woods.

First record: Williams, c. 1800, 'in the Pool Tail Coppice above Pitchford House, plentifully.'



Restricted to damp, base-rich woodlands, where it often grows along muddy tracks, especially where they cross streams. It is usually only rare in an undisturbed ground flora, but it can be very abundant along churned-up rides where there is more light and bare ground. Most sites for it are W8 *Fraxinus excelsior* woods such as those east of The Ercall and along the Borle Brook at New England, but occasionally it occurs in W6 *Salix x fragilis* woods such as those along the Borle Brook at Defford.

It appears to have increased in the county over the years. Leighton (1841) did not record it at all, citing just the one record by Williams at Pitchford, where it was also collected by R.M. Serjeantson in 1881 (SHY). Sinker (1985) found it mainly in the lower Severn Valley, but since then it has been recorded in the

Ironbridge area and in woods in the valley of the Dee. A good place to see it is in woodland by the Borle Brook at Ray's Bridge, where it was first recorded by W.A. Thompson in 1981.

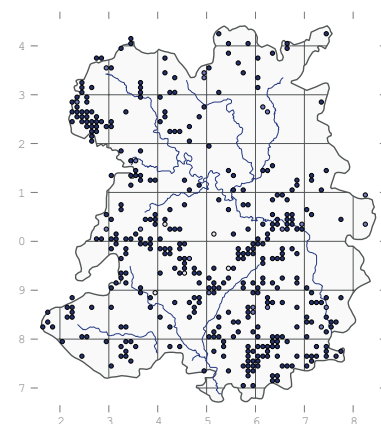
***Carex flacca* Schreber****Glaucous Sedge**

Native. Local. Stable. Grassland, quarries, roadsides, upland flushes.

First record (as *C. recurva*): Williams, c. 1800, 'moist pastures and sides of ditches.'

In calcareous grassland such as CG2 *Avenula pubescens* in places such as Craig Sychtyn and Dolgoch Quarry; CG3 *Bromopsis erecta* at Hilltop Meadow and Lea Quarry; and CG7 *Thymus polytrichus* in Farley Quarry. Sometimes it occurs in stands of MG1 *Arrhenatherum elatius* on damp roadsides or in species-rich variants such as the MG1e *Centaurea nigra* at Ropewalk Meadow. It is also recorded in MG4 *Sanguisorba officinalis* at Lord's Meadows (Trueman, 1981); MG5 *Festuca rubra* everywhere; MG6 *Cynosurus cristatus* at Ruewood; MG8 *Caltha palustris* in places like Crose Mere, Molverley Farm and Morton Pool (D.H. Wrench, 1991); MG9 *Deschampsia cespitosa* at Crose Mere; and MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981).

It is also frequent in the more base-rich mires such as M10 *Carex dioica* at Hope Bowdler (P. Eades, 2010), Shirlett Gutter (Trueman, 1980) and Trefonen Marshes; M13 *Palustriella commutata* at Hope Bowdler (Eades, 2010) and Trefonen; M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Crose Mere (Trueman, 1984), Morton Pool (Wrench, 1991) and elsewhere; M23 *Juncus effusus* on Brown Clea (Trueman, 1981), Haughmond Hill and Hope Bowdler (Eades, 2010); and M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981). Good places to look for it include limestone quarries such as Pattens Rock Quarry on Benthall Edge.



## Carex panicea L.

### Carnation Sedge

Native. Local. Stable. Axiophyte: grassland and flushes.

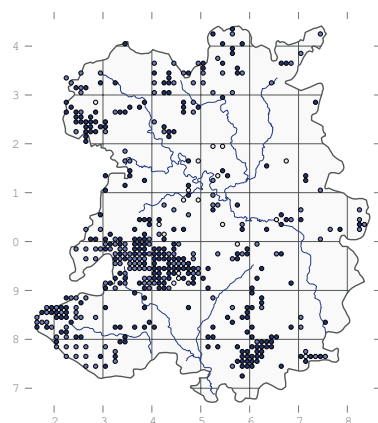
First record: Williams, c. 1800, 'moist pastures.'

In a variety of habitats, from acid flushes on the hills to dry limestone grassland in abandoned quarries. At Dolgoch Quarry, for instance, it occurs in CG2 *Avenula pubescens* grassland on old spoil heaps. It is reasonably common in mesotrophic grasslands such as MG1 *Arrhenatherum elatius* at Ropewalk Meadow; MG5 *Festuca rubra* in many places; MG6 *Cynosurus cristatus* at Ruewood Pastures; MG8 *Caltha palustris* at Crofts Mill (C. Walker, 1994), Crose Mere, Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* at Hill Houses; and MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981).

Its main habitat is in mires such as M6 *Carex echinata* on the Long Mynd (R. Tapper, 1983) and the Stiperstones (Trueman, 1981); M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010), Shirlett Gutter (Trueman, 1980), Titterstone Clee (A.K. Thorne, 1999) and Trefonen Marshes; M13 *Palustriella commutata* at Caer Caradoc (R. Meade, 2010), Hope Bowdler (Eades, 2010)

and Trefonen; M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Crose Mere, Sweeny Fen and elsewhere; M23 *Juncus effusus* and M23a *J. acutiflorus* in many places; M24 *Cirsium dissectum* at Black Coppice and Cole Mere; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); M29 *Potamogeton polygonifolius* flushes in Callow Hollow (Tapper, 1983); and M35 *Montia fontana* at Boiling Well (Trueman, 1980), Caer Caradoc (Meade, 2010).

Sometimes it is found in U5 *Nardus stricta* grassland, as at Titterstone Clee (Thorne, 1999) and Rhos Fiddle; and W6 *Salix* × *fragilis* woodland at Morton Pool (M.J. Wigginton, 1979). A good place to see it is in Yell Meadow at Cole Mere, where it was first recorded by Leighton in 1840.

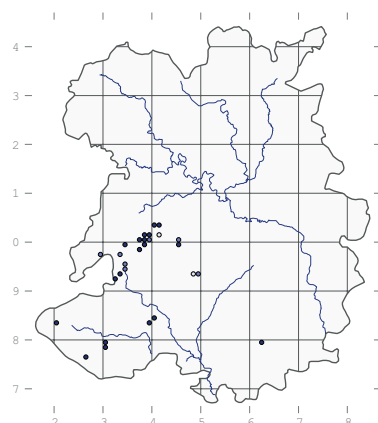


## Carex laevigata Smith

### Smooth-stalked Sedge

Native. Local. Stable. Axiophyte: moorland and woodland flushes.

First record: Beckwith, 1889, 'Smethcott Coppice.'



In flushes and by streamsides in woodland, or open moorland on the hills. At Brook Vessons it occurs in W7 *Lysimachia nemorum* woodland, but elsewhere its habitat has not been studied. It is most frequent on the lower slopes of the Stiperstones, but there are also recent records for Selley

(P.R. Green, 2010), Clun Hill (J. Clayfield, 2008), Hopesay Hill (Clayfield, 2009), in the wood at Wart Hill (Clayfield, 2001) and at Smethcott (J. Ibbott, 2005).

## Carex binervis Smith

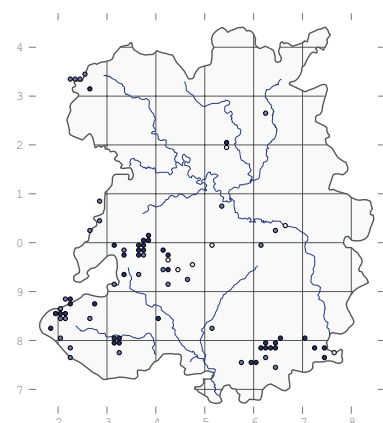
### Green-ribbed Sedge

Native. Local. Stable. Axiophyte: moors, heaths and grassland.

First records: Williams, c. 1800, 'on Shawbury heath and in a piece of boggy ground on the east side of the Stiperstones.'

Occasional in upland heaths such as H8 *Ulex gallii* at Cramer Gutter; H12 *Vaccinium myrtillus* at Rhos Fiddle; M15 *Trichophorum germanicum* at Cramer Gutter; and M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981). Sometimes it extends into grassland such as U5 *Nardus stricta* on the Stiperstones (Trueman, 1981).

It is now shown to be more widespread than in Sinker's Flora. It still grows in Shawbury Heath, where it is rare along a forestry ride. Good places to look for it include the Stiperstones, where it is very widespread but thinly scattered, or at Lower Short Ditch Turbary.



## Carex distans L.

### Distant Sedge

Native. Extinct (ca. 1892).

This is a mainly coastal species that sometimes occurs in damp grasslands inland. Williams (c. 1800) recorded it at Eaton Mascott, Golding, Pitchford, Shawbury Heath and 'under the Wrekin.' These are all field records, but they are widely accepted (see Sinker *et al.* 1985 p. 302). Unfortunately the whereabouts of any voucher specimen is unknown. W.E. Beckwith collected a specimen some time in the 19th century at Eaton Constantine, which is confirmed by S.M. Walters (SHY).



Carex acuta



[*Carex extensa* Gooden., Long-bracted Sedge

Recorded on Whixall Moss by F. Dickinson (Leighton 1841).]

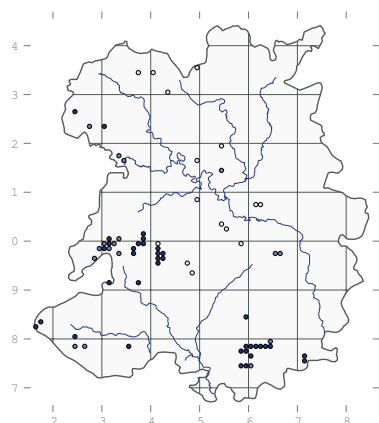
### *Carex hostiana* DC.

#### Tawny Sedge

Native. Local. Stable. Axiophyte: flushes and mires.

First records (as *C. fulva*): Williams, c. 1800, 'boggy margin of Golden pool; a boggy field called Mosterley adjoining Cound Moor; in an alder copse at the south end of the Wrekin; about Hardwick near Ellesmere.'

In mires such as M10 *Carex dioica* at Shirlett Gutter (Trueman, 1981), Titterstone Clee (A.K. Thorne, 1999) and Trefonen Marshes; M13 *Palustriella commutata* at Trefonen Marshes; M15 *Trichophorum germanicum* at Cramer Gutter (Trueman, 1979); and M23a *Juncus acutiflorus* on Stapeley Hill (Trueman, 1981). It is not rare on the hills but it has declined to just a few sites in the lowlands: there are recent records of it only at Trefonen Marshes, Morton Pool and the Wyre Forest. The best place to see it is on the Stiperstones, where it has been recorded many times since Leighton (1841).



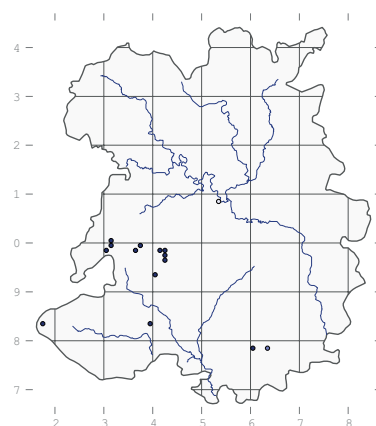
### *Carex × fulva* Gooden. (*hostiana* × *viridula* agg.)

Native. Local. Stable. Axiophyte: flushes and mires.

First record (as *C. fulva*): Williams, 1792, 'in a boggy meadow under Cronkhill Bank,' det. S. Goodenough, BM, LIV. The specimen at BM is considered by D.A. Pearman to be *hostiana* × *lepidocarpa* and that at LIV by A.C. Jermy to be *hostiana* × *demissa*.

Common where both parents occur, having a similar ecology to *C. hostiana*. Trueman (1981) recorded it in an M23a *Juncus acutiflorus* flush on Stapeley Hill. It has also been recorded in several places on the Long Mynd (A.K. Thorne, 2004-

2010), at Catherton Common (Sink, 1962), Gors Bank (J. Clayfield, 2010), Hopesay Hill (Clayfield, 2009), the Stiperstones, Titterstone Clee (Thorne, 2004) and Trefonen Marshes. On the Stiperstones it occurs up to about 440 m (SO36979818, A.O. Chater & Whild, 2010).



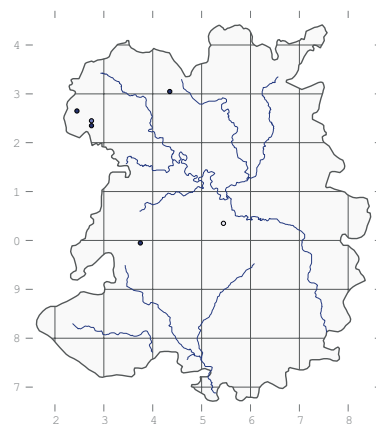
### *Carex lepidocarpa* Taisch

#### Long-stalked Yellow Sedge

Native. Rare. Stable. Axiophyte: base-rich flushes.

First record (as *C. flava* var. *polystachya*): Leighton, 1840, 'Golden Pool, June 1840, intermixed with the usual states' (det. Sink, SHY).

In M10 *Carex dioica* at Trefonen Marshes and M22 *Juncus subnodulosus* fen at Crose Mere (both Trueman, 1981). There are recent records of it at Trefonen, on the Stiperstones (SO377997, 2008, BIRM) and in Upper Butcher's Quarry on Llyncllys Hill (SJ2723, J. Clayfield, 2009).



### *Carex demissa* Hornem.

#### Common Yellow Sedge

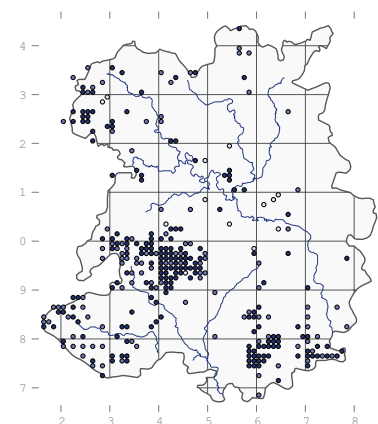
Native. Local. Stable. Axiophyte: upland flushes, woodland rides, mires.

First record (as *C. flava*): Williams, c. 1800, 'sides of pools, bogs and wet commons.'

Frequent in flushes and lowland mires. It is recorded in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983);

M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010), Titterstone Clee (A.K. Thorne, 1999) and Trefonen Marshes; M13 *Palustriella commutata* at Caer Caradoc (R. Meade, 2010) and Trefonen; M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench 1991); M23 *Juncus effusus* at Brook Vessons, Haughmond Hill and elsewhere; M23a *J. acutiflorus* on Stapeley Hill (Trueman, 1981) and the Stiperstones; M29 *Potamogeton polygonifolius* in Callow Hollow (Tapper, 1983); and M35 *Montia fontana* in many places on the Long Mynd (Tapper & Owen, 1983) and Caer Caradoc (Meade, 2010).

Elsewhere it is recorded in CG10 *Helianthemum nummularia* in Minton Batch (Tapper, 1983); MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981); and W4 *Betula pubescens* on Haughmond Hill.



[*Carex × corstorphineae* Druce (*C. binervis* × *viridula*) was recorded by Sink in 1962 (*Transactions for 1961-1967* (1968)) but later withdrawn. A specimen of *C. × fulva* collected on the same date is in SHY.]

### *Carex oederi* Retz.

#### Small-fruited Yellow Sedge

Native. Rare. Stable. Axiophyte: fluctuating lake margins.

First record: Sink, 1963, Brown Moss.

Its only site in Shropshire is on the bare margins of Pool 6 at Brown Moss (SJ563392), where it was thought to have gone extinct until it was refound by Trueman in 1985. It persisted until 1997 until encroachment by willow scrub led to its demise in the late 1990s from a combination of shading and changing the substrate through the deposition of leaf litter. Following drastic tree clearance work in 2004/5, it reappeared again in 2006.

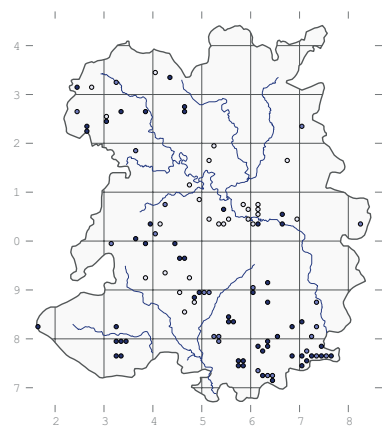
## *Carex pallescens* L.

### Pale Sedge

Native. Local. Increasing. Axiophyte: grassland and woodland.

First record: Williams, c. 1800, 'moist meadows above Pitchford and Battlefield; Cantlop and Bomere woods.'

Usually in species-rich grassland such as MG5 *Festuca rubra* at Hill Houses, Tana Leas Farm (both D.H. Wrench, 1995) and Stapeley Hill (Trueman, 1981) or in M22 *Juncus subnodulosus* at Porth-y-waen (Trueman, 1981) and M23 *Juncus effusus* at Vron Wood. Sometimes also in damp woods, including W10 *Quercus robur* at Bannister's Coppice. It is more widespread now than in Sinker's Flora, although older records suggest it may have been under-recorded then. There is good evidence that it has recently colonised Ropewalk Meadow and Yell Meadow at Cole Mere, because these sites were thoroughly surveyed prior to its appearance in 2001 and 2007 respectively.



## *Carex digitata* L.

### Fingered Sedge

Native. Rare. Stable. Axiophyte: calcareous woods.

Only at Tick Wood (SJ638027), where it was discovered by C. Walker in 1977 on a roadside bank in W8 *Fraxinus excelsior* woodland, at an altitude of about 80 m. The population varies from a few dozen to about 100 clumps over the years, but there has been no obvious change overall.

## *Carex caryophylllea* Latour

### Spring Sedge

Native. Local. Stable. Axiophyte: grassland.

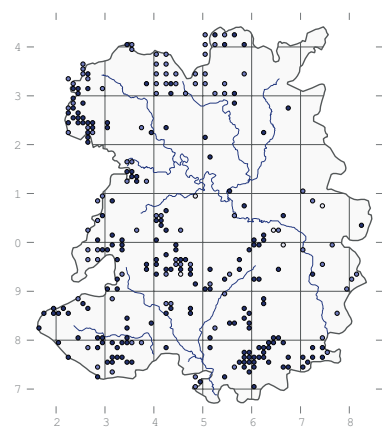
First record (as *C. praecox*): Williams, c. 1800, 'ditch banks.'

Restricted to short grassland, usually species-rich swards in permanent pasture. It occupies the entire range

from calcareous to acidic soils, but never occurs in waterlogged or very dry situations.

It is recorded in CG2 *Avenula pubescens* in many places, including Llynclys Hill and Windmill Hill; CG3 *Bromopsis erecta* at Stokes's Barn (Trueman, 1981); CG7 *Thymus polytrichus* at Presthope; and CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Llynclys Hill.

In mesotrophic grasslands there are records for MG5 *Festuca rubra* at Moelydd, Stocking Meadows (Trueman, 1981), Vron Wood and elsewhere; and MG8 *Caltha palustris* at Morton Pool. In acid grassland it has been recorded in U1 *Rumex acetosella* on Titterstone Clee (Trueman, 1981); U4 *Agrostis capillaris* on Brown Clee; and U5 *Nardus stricta* on Titterstone Clee (A.K. Thorne, 1999). Good places to look for it include Clun Castle mound and the meadows on Llynclys Hill.

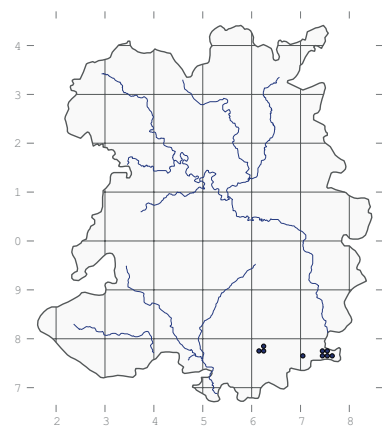


## *Carex montana* L.

### Soft-leaved Sedge

Native. Scarce. Stable. Axiophyte: woods, grassland and heaths.

First record: J.H. Thompson, det. W.H. Painter, 1876, Cooper's Mill, Wyre Forest (SHY).



In several places in the Wyre Forest, including Chamberline Wood (first

recorded by M.C. Clark in 1976), Coachroad Coppice (J. Bingham, 1982), Longdon Orchard (M.E. Smith, 1972), Longdon Wood (Clark, 1976) and Wimpey Wood (Clark, 1976). It was first recognised by J.B. Duncan in 1902, but a specimen collected quarter of a century earlier by Thompson was re-examined by Painter and found to be this species. It has since been found in several places on Catherton Common (J. Bingham, 1999).

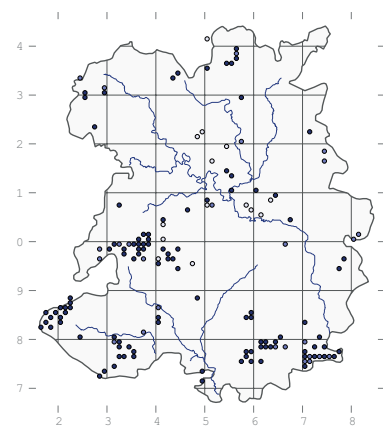
## *Carex pilulifera* L.

### Pill Sedge

Native. Local. Stable. Axiophyte: heaths, oak woods and acid grassland.

First records: Williams, c. 1800, 'by the side of Shomere pool and under Harmer Hill; Battlefield Woods.'

Occasional on acid, peaty soils in both lowland and upland situations in a variety of communities. It is recorded in H8 *Ulex gallii* on Prees Heath; MG5c *Danthonia decumbens* on Llynclys Hill and at Marl Allotment; M23 *Juncus effusus* at Brook Vessons; U1 *Rumex acetosella* on Prees Heath; U4 *Agrostis capillaris* at Rhos Fiddle; U5 *Nardus stricta* at Squilver (Trueman, 1981) and Titterstone Clee (A.K. Thorne, 1999); and in cleared W16 *Quercus petraea* woodland at Oaks Wood. Good places to look for it include the Stiperstones, where it is widespread, and Brown Moss, where it was first recorded by Sinker in 1962 and where it is still present in patches of dry heathland.



## *Carex limosa* L.

### Bog Sedge

Native. Rare. Last recorded in 1976. Axiophyte: bogs.

First records: Williams, c. 1800, 'by the side of Bomere pool; bog below Weeping Cross turnpike near Salop; bogs about Lee near Ellesmere.'

Entirely restricted to the wettest bogs, but now extinct in Shropshire. It was known in four sites in the county.

Williams's site at Lee was probably destroyed in about 1800 when the canal was constructed, and it was never seen there again. At Weeping Cross Bog it was last seen by F. Dickinson in about 1841. At Bomere Pool it was found by Leighton and C.C. Babington in 1834 and last seen by Beckwith in 1882 (BM). At Clarepool Moss it was discovered by W.E. Beckwith in 1882 and it persisted until 1976 (K.K. Bell, conf. Sinker).

### *Carex acuta* L.

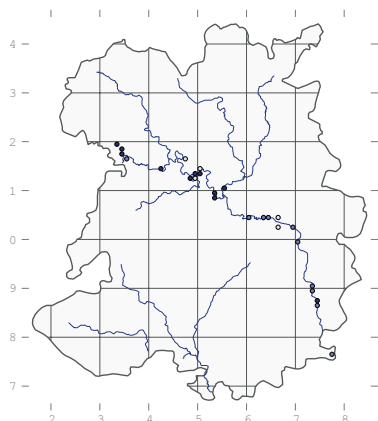
#### Slender Tufted-sedge

Native. Local. Stable. Axiophyte: rivers and swamps.

First record: Williams, c. 1800, 'ponds and sides of rivers. River Tern etc.'

Only on the banks of the Severn and the lower reaches of the Tern, where it usually grows in clumps at the base of steep, muddy banks in full sunlight or light shade, and is most easily seen from a boat or from the opposite shore. Occasionally it is found in ditches and wet meadows close to the river.

In Shrewsbury it has been observed to appear where alders died, leaving bare ground and little shade, but it goes into decline again when the tree canopy returns. When it grows by the river it always occurs in small stands, but at Edgerley it forms more extensive swamps in floodplain farmland (A.K. Thorne, 2003). A good place to see it is in Shrewsbury, where there have been clumps near Porthill Bridge (SJ484124) and at Frankwell (SJ492130) in recent years.



### *Carex × elytroides* Fries (*acuta* × *nigra*)

Native. Rare. Stable. Swamps.

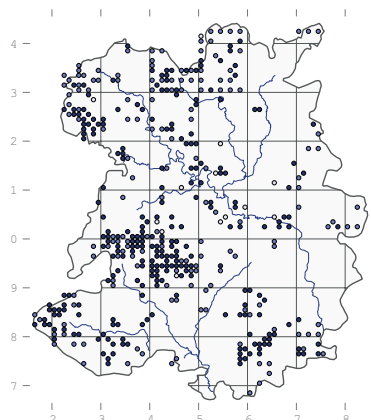
In a seasonally flooded field near Edgerley (SJ348181, A.K. Thorne, 2001, conf. A.C. Jermey, BIRM) and at Lower Farm, Ford (SJ422142, Thorne, 2005, conf. M.S. Porter). There is a specimen at SHY, collected by R.M. Serjeantson at Cole Mere in 1880, which has been

identified as this by E.F. Linton and C.A. Sinker but, given that *C. acuta* does not occur in the meres, it warrants further investigation.

### *Carex nigra* (L.) Reichard Common Sedge

Native. Local. Stable. Axiophyte: flushes, wet grassland, swamps and fens.

First record (as *C. caespitosa*): Williams, c. 1800, 'moist meadows about Eaton, etc.'



On peaty soils in lowland and upland situations, in a variety of habitats but generally in undisturbed, species-rich sites. It is not common in heaths, but is found in H12 *Vaccinium myrtillus* at Rhos Fiddle. It is an occasional component of wet grassland such as MG5 *Festuca rubra* at Hill Houses, Lubberland (both D.H. Wrench, 1995) and Ruewood Pastures; MG6 *Cynosurus cristatus* at Ruewood; MG8 *Caltha palustris* at Crose Mere and Ruewood; MG10 *Holcus lanatus* at Fenemere (C. Walker, 1988) and Diddlebury (Trueman, 1981); U4 *Agrostis capillaris* at Rhos Fiddle; and U5 *Nardus stricta* at Rhos Fiddle, the Stiperstones (Trueman, 1981) and Titterstone Clee (A.K. Thorne, 1999).

In mires it occurs in M2 *Sphagnum fallax* at Rhos Fiddle; M6 *Carex echinata* on the Stiperstones and M6b *C. nigra* on Stapeley Hill (both Trueman, 1981); M15 *Trichophorum germanicum* at Cramer Gutter; in all stands of M22 *Juncus subnodulosus*; M23 *J. effusus* at Brook Vessons, Sweat Mere and elsewhere; M24 *Cirsium dissectum* at Black Coppice Meadow and Yell Meadow; M25 *Molinia caerulea* at Black Coppice; and M35 *Montia fontana* at Boiling Well (Trueman, 1981).

At Berrington Pool it was recorded in OV26 *Epilobium hirsutum* tall herb by M.J. Wigginton (1979); and it is found in several other types of swamps: S7 *Carex acutiformis* in the Old River

Bed; S9 *C. rostrata* at Wildmoor Pool (Trueman, 1981); and S27 *Comarum palustre* at Berrington Pool and at the Moors, Ellesmere.

Sometimes it persists in woods such as W4 *Betula pubescens* at Bomere Pool (Wigginton, 1979) and on Haughmond Hill; and in W7 *Lysimachia nummularia* at Brook Vessons.

### *Carex elata* All. Tufted Sedge

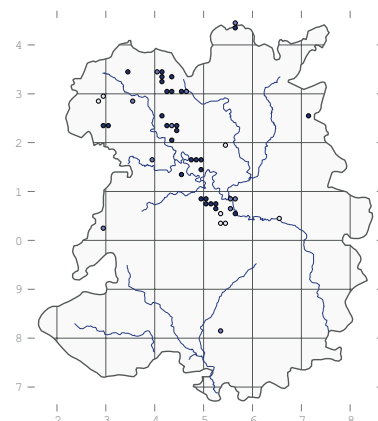
Native. Local. Stable. Axiophyte: fens and wet woodland.

First records (as *C. stricta*): Williams, c. 1800, 'pits, ponds and ditches about Eaton Mascott, Pitchford, etc.'

A large, tussock-forming sedge which is found on the margins of meres and in wet woodland and grassland with fluctuating water levels. Its most characteristic habitats are M22c *C. elata* fen in places like the margin of Crose Mere and W5 *Alnus glutinosa* woodland on the margins of meres such as Blake Mere, Kettle Mere, Oss Mere and Sweat Mere.

It is also recorded in M23 *Juncus effusus* at Bomere Pool and Oxon Pool; S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S6 *Carex riparia* at Blake Mere (M.J. Wigginton, 1979); S12 *Typha latifolia* at the Long Bog; S13 *T. angustifolia* at Bomere Pool, and S14 *Sparganium erectum* at Berrington Pool.

On the margin of Fenemere it occurs in S26 *Phragmites australis*, and at Hencott Pool and Fenemere it persists in W6 *Salix × fragilis* woodland. It is strictly a lowland plant, being found only up to about 110 m at Old Marton (SJ346342, 2009).





## Vascular plants

[*Carex bigelowii* Torrey ex Schwein., Stiff Sedge

Recorded at Llanyblodwel by Isaac Watkin in 1900 and at Llynclys by Thomas Diamond in 1891, but most unlikely.]

### *Carex pulicaris* L.

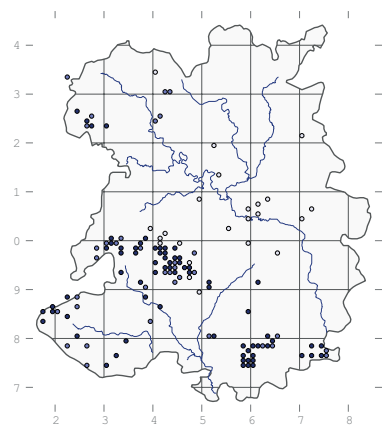
#### Flea Sedge

Native. Local. Decreasing. Axiophyte: grassland, moorland, flushes.

First records: Williams, c. 1800, 'boggy grounds, not uncommon. On Cound Moor, Haghmon Hill, under the Wrekin, about the Stiperstones.'

In damp meadows and flushes, including MG5c *Danthonia decumbens* at Rushbury (D.H. Wrench, 1994); M10 *Carex dioica* on Titterstone Clee (A.K. Thorne, 1999); M13 *Palustriella commutata* at Trefonen Marshes; M15 *Trichophorum germanicum* at Cramer Gutter (Sinkler, 1984); M23 *Juncus effusus* in Gogbatch (C.M. Owen, 1983); and M35 *Montia fontana* at Boiling Well, Carding Mill Valley and Lightspout Hollow (all Owen & Tapper, 1983).

Sometimes it colonises abandoned quarries such as Butcher's Quarry on Llynclys Hill (M.E. Roberts, 1989) and Titterstone Quarry (N. Button, 2006). A good place to look for it is on Hope Bowdler Hill, where it is frequent in flushes above Cwms Farm.



## Poaceae

### *Fargesia spathacea* Franc.

#### Chinese Fountain-bamboo

Neophyte. Rare. Planted. Gardens.

Just one record: at Craig Sychtyn in 1993 (Perring).

### *Sasa palmata* (Burb.) E.G. Camus

#### Broad-leaved Bamboo

Neophyte. Rare. Planted. Gardens.

Planted in Old Rectory Wood (M.S.

Duffell, 2008) and in the roadside hedge at Hadnall Church.

### *Pseudosasa japonica* (Siebold & Zucc. ex Steud.)

#### Arrow Bamboo

Neophyte. Rare. Planted. Gardens.

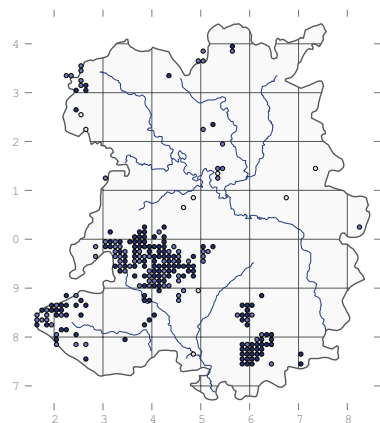
In a woodland edge at Coalport, SJ700022 (R.M. Stokes, 1996).

### *Nardus stricta* L.

#### Mat-grass

Native. Local. Stable. Axiophyte: acid grassland.

First record: W. Withering, 1787, 'Lilleshall Mill-pool dam.'



Frequent in upland grassland, most abundant in U5 *N. stricta* grassland in places like Rhos Fiddle, the Stiperstones and Titterstone Clee (A.K. Thorne, 1999). It is also found in U4 *Agrostis capillaris* at Rhos Fiddle; H9 *Deschampsia flexuosa* at Catherton Common; and H12 *Vaccinium myrtillus* heath at Rhos Fiddle.

It is common along grassy paths and flushes such as M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983) and Stapeley Hill (Trueman, 1981); M10 *C. dioica* on Titterstone Clee (Thorne, 1999); M15 *Trichophorum germanicum* at Cramer Gutter; and M23 *Juncus effusus* flushes and streams at Brook Vessons, Brown Clee (Trueman, 1981) and Gogbatch (C.M. Owen, 1983). At Shelve Pool it has been recorded in M25 *Molinia caerulea* mire (Trueman, 1981). At Lubberland and on Silvington Hill it grows in MG5c *Danthonia decumbens* grassland (D.H. Wrench, 1994-1995) and at Cramer Gutter it even extends into MG6 *Cynosurus cristatus* at the top of the reserve. It has disappeared from many sites in the lowlands. Williams considered it common in the early 19<sup>th</sup> century and in 1904 W.E. Thompson described it as occurring 'from the summit of the Stiperstones to

the lowest meadows of Eaton-under-Heywood.' On the plain it is now only recorded at Brown Moss and in Yell Meadow at Cole Mere.

### *Nassella tenuissima* (Trin.)

#### Barkworth

#### Argentine Needle-grass

Neophyte. Rare. Casual. Waste ground.

Established on roadsides in Castlefields, Shrewsbury in 2005, but not persisting.

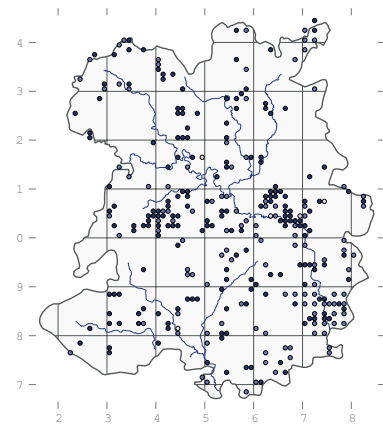
### *Milium effusum* L.

#### Wood Millet

Native. Local. Stable. Axiophyte: woods.

First record: Williams, c. 1800, 'woods, not uncommon.'

Entirely restricted to woods, mostly on circumneutral soils, such as W6 *Salix × fragilis* at White Mere; W7 *Lysimachia nemorum* along the brook east of the Ercall (Trueman, 1981); W8 *Fraxinus excelsior* at Haughmond Abbey, Redhill Coppice, the Ercall (Trueman, 1981) and elsewhere; W10 *Quercus robur* on Haughmond Hill and Maddocks Hill (Trueman, 1981); and W16 *Q. petraea* at Oaks Wood. It is mainly in the lowlands, but reaches up to about 300 m at Maddox's Coppice (SJ3803, 2008). A good place to see it is in Benthall Edge Wood, where it has been recorded often since Leighton's time (G. Lloyd).



### *Schedonorus pratensis*

(Huds.) P. Beauv.

#### Meadow Fescue

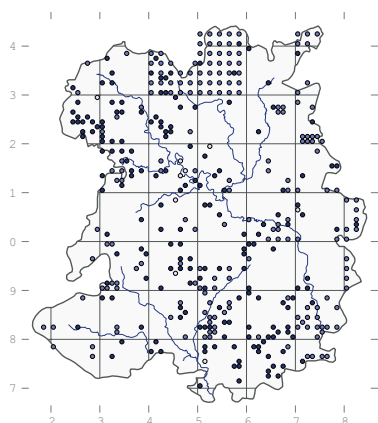
Native. Widespread. Stable. Grassland.

First record (as *Festuca pratensis*): Williams, c. 1800, 'meadows, common.'

Frequent in damp grassland, especially old species-rich pastures on slightly base-rich soils, but also occurring on roadsides, railway embankments and even in sown fields of birdseed mix, as at Cound Stank near Venus Pool in 2006.

It is most often recorded in mesotrophic grasslands such as MG1e *Arrhenatherum elatius* at Blackfriars field and along the edges of Ropewalk Meadow; MG5 *Festuca rubra* at Ropewalk, Ruewood, Derrington Meadow (Trueman, 1981) and elsewhere; MG8 *Caltha palustris* at Crofts Mill (C. Walker, 1994), Crose Mere etc; MG10 *Holcus lanatus* at Diddlebury (Trueman, 1981) and Fenemere (Walker, 1988).

It is also frequent in mires such as M22 *Juncus subnodulosus* at Crose Mere, Morton Pool (D.H. Wrench, 1991) and Trefonen Marshes (Trueman, 1981); and M23 *Juncus effusus* at Ruewood (P. Welsh, 1981). There is one record of it in CG3 *Bromopsis erecta* at Stretton Westwood (Wrench, 1995), before Lea Quarry was extended across that area.



### *Schedonorus arundinaceus* (Schreb.) Dumort.

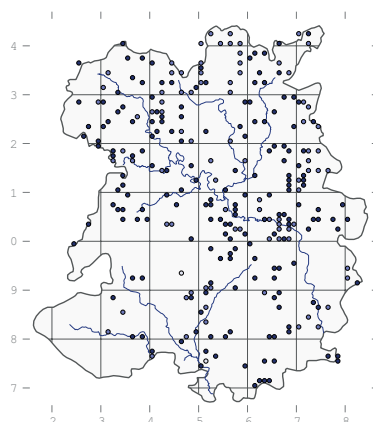
#### Tall Fescue

Native. Widespread. Increasing. Grassland.

First record (as *Festuca elatior*): J. Babington, 1803, Ludlow.

Typical of tall, unmanaged grassland such as MG1 *Arrhenatherum elatius* along road verges and in overgrown meadows such as Blackfriars Meadow in Shrewsbury. In some parts of the county, where arable farming is particularly intensive (e.g. in the Rea valley around Marton, Chirbury) it largely displaces *Arrhenatherum elatius* on road verges, forming a species-poor community with only this species and *Anthriscus sylvestris* constant. It is also found in MG5 *Festuca rubra* at Hilltop Meadow and M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1993). At Muxton Marsh there is an area of wetland that has formed on industrial wasteland that is dominated by *S. arundinaceus*. Leighton recorded it on the banks of the Severn in Shrewsbury, and it still turns up along

the river from time to time. It is also often reported from canal banks (e.g. Montgomery Canal at Maesbury Marsh, 1997) and spoil heaps in Telford such as Ketley Pitmounds (P.S. Gateley, 2003).



### *Schedonorus giganteus* (L.)

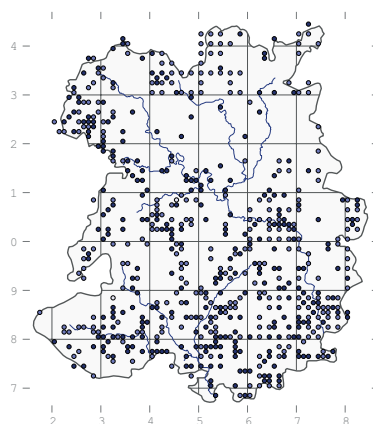
Holub

#### Giant Fescue

Native. Widespread. Stable. Woods.

First record (as *Festuca gigantea*): Williams, c. 1800, 'woods and moist ditch-banks.'

Occasional in damp woods on calcareous to neutral soils, usually in W8 *Fraxinus excelsior* in places like Hampton Beech and Redhill Coppice (both Trueman, 1981), below the Ercall and at Brownheath Moss. It also grows in W6 *Salix* × *fragilis* by the Borle Brook at Defford and in W7 *Lysimachia nemorum* woodland at Birchen Park. It is most common near paths and on shady roadsides where there is only partial shade, and it often occurs on river banks or by canals. It is not found over about 300 m in the county. A good place to look for it is at Shelton Rough, where it was first recorded by Leighton in 1841.



### × *Schedolium loliaceum*

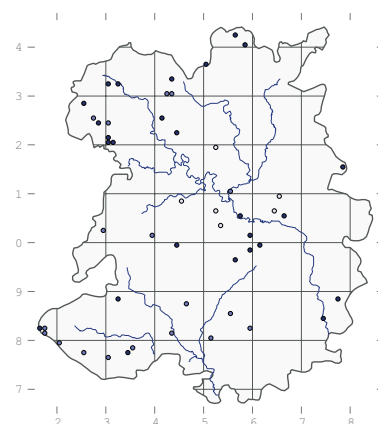
(Huds.) Holub (*Schedonorus pratensis* × *Lolium perenne*)

#### Hybrid Fescue

Native. Scattered. Stable. Grassland.

First record (as *Festuca loliacea*): Williams, 1790, 'moist meadows about Berrington and Pitchford.'

In unimproved, often damp grassland in places like Attingham Park (Perring, 1972), Brook Vessons (Sinker, 1974) and Cole Mere. It is slightly more common in limestone areas such as Wenlock Edge, where it grows in MG5 *Festuca rubra* at Hilltop Meadow and, formerly, in CG3 *Bromopsis erecta* at Stretton Westwood (D.H. Wrench, 1995). It occurs spontaneously and is largely infertile, so it is rarely recorded in the same place more than once. There are more records of it now than in Sinker's Flora, but it seems unlikely to have increased.



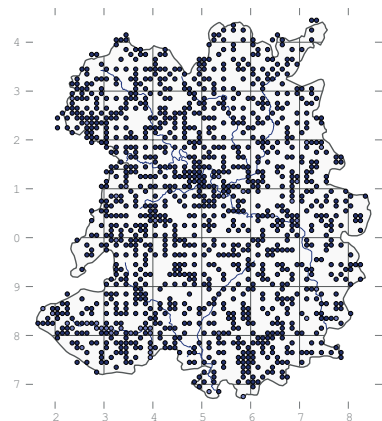
*Schedonorus arundinaceus*

## *Lolium perenne* L.

### Perennial Rye-grass

Native. Widespread. Increasing. Grassland.

First record: Williams, c. 1800, 'meadows and pastures, common.'



The dominant species in most semi-improved and improved pastures and leys, most distinctively in MG7 *L. perenne*, which is typically a sown ley with up to 100% cover of this one species; and MG6 *Cynosurus cristatus* grassland, which is possibly the most widespread vegetation type in the county. The other *Lolium*-dominated vegetation community is OV23 *Dactylis glomerata*, which is ubiquitous on roadsides, gardens and amenity grassland throughout the county.

In semi-natural habitats it is recorded in CG3 *Bromopsis erecta* on Wenlock Edge; MG1 *Arrhenatherum elatius* in meadows, roadside verges and along railways lines throughout the county; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG5 *Festuca rubra* everywhere; MG8 *Caltha palustris* at Crose Mere, Melverley Farm and Morton Pool; and MG10 *Holcus lanatus* at Fenemere. Sometimes it extends into wetter habitats such as M22 *Juncus subnodulosus* at Sweeny Fen and S22 *Glyceria fluitans* water-margin vegetation in the Coalport Canal (Trueman, 1981). There is only one record of it in U1 *Rumex acetosella*, at Abbot's Castle Hill (Trueman, 2005).

Where grassland has turned to scrub, it persists in W24 *Rubus fruticosus* at High Rock, Bridgnorth and open W8 *F. excelsior* woodland at Blodwel Rock (both Trueman, 1981) and Oaks Wood. Like *L. multiflorum* and *L. × boucheanum* it also grows in arable fields, where it is either a crop volunteer or a casual. There are records of it in OV10 *Senecio vulgaris* on waste ground at Newport; OV18 *Polygonum aviculare* in fields at Edgmond; OV22

*Taraxacum officinale* in Buildwas Sand Quarry (the last three by Trueman, 1981); and OV25 *Cirsium arvense* in an arable field at Kingshead.

## *Lolium × boucheanum*

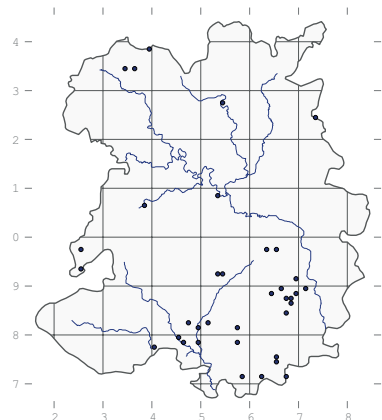
Kunth (*L. perenne* × *multiflorum*)

### Hybrid Rye-grass

Neophyte. Scattered. Stable. Farmland and roadsides.

First record: Lockton, 2005, 'in the gateway to an arable field near Atcham, SJ537089) (conf. T.A. Cope, BIRM).

A short-lived perennial which tends to occur as clumps on the edges of arable fields, around gateways in pastures and on roadsides. It is sometimes sown as an agricultural grass, but it is more widespread as a casual. It is also believed to occur spontaneously, which would technically make it a native species, but all records of it so far are from agricultural sites.

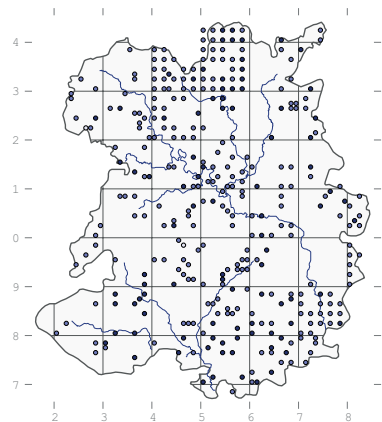


## *Lolium multiflorum* Lam.

### Italian Rye-grass

Neophyte. Widespread. Stable. Arable fields, grassland.

First record (as *L. perenne* var. *italicum*): W. Phillips, 1891, 'on road from Leebotwood to Woolstaston.'



Introduced in the 19<sup>th</sup> century to improve pastures, and still widespread as a casual in fields, but probably now over-recorded for *L. × boucheanum*. It

has been recorded in OV10 *Senecio vulgaris* vegetation on waste ground in Shifnal and in OV23 *Dactylis glomerata* on a roadside at Uppington (both Trueman, 1981) and sometimes it occurs as a casual on mud banks by the Severn in Shrewsbury.

## *Lolium temulentum* L.

### Darnel

Archaeophyte. Rare. Last recorded in 1899. Cornfields.

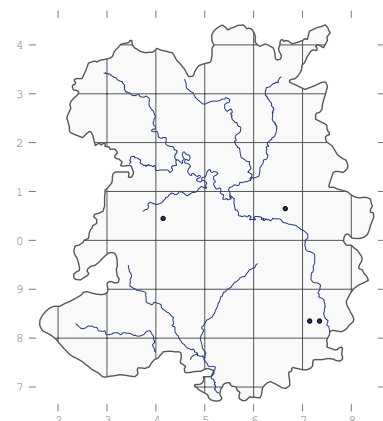
First records: Williams, 1799, 'cornfields between Eaton and Pitchford & about Shawbury Heath.'

A former pest of arable fields. There are four records in Leighton's Flora. Jordan (1856) also recorded it at Farlow and Oretton, and Diamond (1891) listed it as common in the Oswestry area, but without any localities. It was last recorded at Bomere Pool in 1891 by R.D. Benson (SHYB).

## *Festuca altissima* All.

### Wood Fescue

Native. Scarce. Stable. Axiophyte: wooded river banks.



In humid woodland, generally near waterfalls in ancient woodland. Although Sinker (1985) mentions earlier rumours of its occurrence in south Shropshire, W.A. Thompson seems to have been the first to record it in 1981 – a small patch in a steep wooded gully at Bind Plantation near Ray's Bridge in 1981, where it still grows. It is entirely restricted to ancient woodlands, usually on slightly calcareous soils in W8 *Fraxinus excelsior* but at Oaks Wood it also grows in W16 *Quercus petraea*. The steep little dingle in which it occurs is cut through base-rich shale in an area of predominantly acid conglomerate. The two other sites are the Borle Brook near Highley (found by Thompson in 1981) and Lydebrook Dingle (C. Walker, 1987). A record in Sinker's



Flora for Donnington Wood was probably an error for *Schedonorus arundinaceus*. The best place to see it is probably in Oaks Wood, where it occurs on the tops of the cliffs above a small gorge.

### *Festuca rubra* L.

#### Red Fescue

Native. Widespread. Stable. Grassland, base-rich mires, tall herb and scrub.

First record: Williams, c. 1800, 'meadows and ditch-banks, common.'

This grass is ubiquitous in, and most characteristic of, MG5 *Festuca rubra* meadows throughout the county. It also occurs in most other mesotrophic grasslands, including MG1 *Arrhenatherum elatius*, especially the MG1e *Centaurea nigra* variant in places such as Ropewalk Meadow and Windmill Hill; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG6 *Cynosurus cristatus* everywhere; MG7e *Plantago lanceolata* at Rudge (Trueman, 1981); MG8 *Caltha palustris* at Crose Mere, Morton Pool and elsewhere; MG9 *Deschampsia cespitosa* in places like Hill Houses and Oss Mere; MG10 *Holcus lanatus* at Diddlebury (Trueman, 1981) and Fenemere (C. Walker, 1988); and MG13 *Alopecurus geniculatus* at Fenemere.

It is also common in calcareous grassland, including CG2 *Avenula pubescens* at Moelydd and Dolgoch Quarry; CG3 *Bromopsis erecta* at Lea Quarry, Stretton Westwood (D.H. Wrench, 1995) and elsewhere; and CG10 *Helianthemum nummularia* on Llyncllys Hill.

The only record of it in heathland is from H8 *Ulex gallii* in Prees Heath, but it is occasional in M10 *Carex dioica* at Hope Bowdler (P. Eades, 2010), Shirlett Gutter (Trueman, 1980) and Trefonen Marshes; M13 *Palustriella commutata* at Hope Bowdler (Eades, 2010) and Trefonen; in all stands of M22 *Juncus subnodulosus*; M23 *Juncus effusus* on Brown Clee (Trueman, 1981), the Stiperstones and elsewhere; M27 *Filipendula ulmaria* at Cole Mere and Marl Allotment; and M35 *Montia fontana* at Lightspout Hollow (R. Tapper, 1983).

Sometimes it is found in open vegetation such as OV23 *Dactylis glomerata* on road verges at Cosford and Shipley (both Trueman, 1981); OV24 *Urtica dioica* on Abbot's Castle Hill (Trueman, 2005); OV26 *Epilobium hirsutum* at Wollerton; and

OV37 *Festuca ovina* on spoil heaps at Snailbeach (Trueman, 1981). It can be difficult to distinguish from *F. ovina* in stressed conditions, but it is occasionally recorded in U1 *Rumex acetosella* in places like Attingham Park, Abbot's Castle Hill (Trueman, 2005) and Ryton Church; and U4 *Agrostis capillaris* at Brown Clee, Cwm Collo, Rhos Fiddle and elsewhere.

Finally, it has been recorded in open W8 *Fraxinus excelsior* woodland on a roadside at Albrighton and scrub on Blodwel Rock (Trueman, 1981); W10 *Quercus robur* at Nant-y-mysells; W23 *Ulex europaeus* on Old Oswestry; and W24 *Rubus fruticosus* hedges in many places.

The subspecies *rubra* is common throughout the range and accounts for most plants, but it was first specifically recorded by Sinkin in 1963 at Batholes Meadow (SJ339009, ABRN); ssp. *commutata* Gaudin is occasionally included in seed mixes and has been recorded in the garden of Shrewsbury prison by the Severn in Shrewsbury (SJ496129, 2005, BIRM) and elsewhere; ssp. *megastachys* is a vigorous form so far recorded only on Llyncllys Hill (SJ275237, J.H. Clarke, 1992, det. C.A. Stace).



### *Festuca ovina* L.

#### Sheep's Fescue

Native. Local. Stable. Upland grassland, rock exposures.

First record: Williams, c. 1800, 'hills and hilly pastures.'

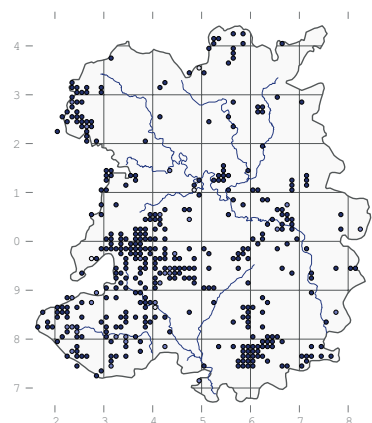
There are several grassland types where *F. ovina* is a constant, if not the dominant component. The most common one is U1 *Rumex acetosella*, which occurs on the south side of many hills and occasionally on sandy heaths and dry bogs in the lowlands. Other upland communities for it include U4 *Agrostis capillaris* in places such as Rhos Fiddle; U5 *Nardus stricta* on Titterstone Clee (A.K. Thorne,

1999) and the Stiperstones; and U20 *Pteridium aquilinum* in Gogbatch (C.M. Owen, 1983) and on Titterstone Clee (Thorne, 1999).

In calcareous grasslands it is found in CG2 *Avenula pubescens* in places such as Craig Sychtyn, Llanymynech Rocks and Moelydd; CG3 *Bromopsis erecta* at Ippikin's Rock, the Foxholes and elsewhere; CG7 *Thymus polytrichus* at Lilleshall Quarry, Moelydd and Presthope; and CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Minton Batch (R. Tapper, 1983).

It often occurs in heathland, including H8 *Ulex gallii* in Carding Mill Valley (Trueman, 1981), Cramer Gutter and Prees Heath; H9 *Deschampsia flexuosa* on the Long Mynd; and H12 *Vaccinium myrtillus* on the Stiperstones and Rhos Fiddle. It is not uncommon in upland stands of MG5 *Festuca rubra* in places such as Guilden Down, Stocking Meadows (Trueman, 1981) and Crickheath Hill (Packham, 1979); and MG6 *Cynosurus cristatus* at Cramer Gutter and Meverley Farm.

It is sometimes recorded in mires, specifically M6 *Carex echinata* at Upper Darnford (Tapper, 1983) and Stapeley Hill (Trueman, 1981); M10 *Carex dioica* on Titterstone Clee (A.K. Thorne, 1999); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* at Upper Darnford (Tapper, 1983); M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); and M35 *Montia fontana* at Wild Moor (Tapper, 1983). Finally, it is recorded in OV39 *Asplenium trichomanes* on outcrops at Holloway Rocks (Trueman, 1981).



***Festuca filiformis* Pourret**  
**Fine-leaved Sheep's-fescue.**

Native. Rare. Stable. Acid grassland.

First record: W.E. Beckwith, 1889, 'Longwood, Bubney Moor' (det. F.H. Perring, SHY).

In similar places to *F. ovina*. It is recorded on Whixall Moss (Perring, 1962), on a sandstone cutting by the Severn Valley Railway at Hay Farm (W.A. Thompson, 1981) and near the summit of Titterstone Clee (F. Rose, 1987).

***Festuca lemanii* Bast.**  
**Confused Fescue**

Only one record: at Blakeway Coppice (M.E. Smith, det. P.J.O. Trist, c. 1970).

***Festuca brevipila* Tracey**  
**Hard Fescue**

Neophyte. Rare. Casual. Road verges.

The only recent record (as *F. trachyphylla* (Hackel) Krajina) is for a roadside verge near Claverley (B.R. Fowler, 1979, det. Stace), but Leighton (1841) seemed confident of separating Hard Fescue (*F. duriuscula* L.) from *F. ovina* and he gives a reasonable description of it, listing it at Lincoln Hill (F. Dickinson) and Cross Hill.

***Festuca rubra* × *Vulpia myuros***

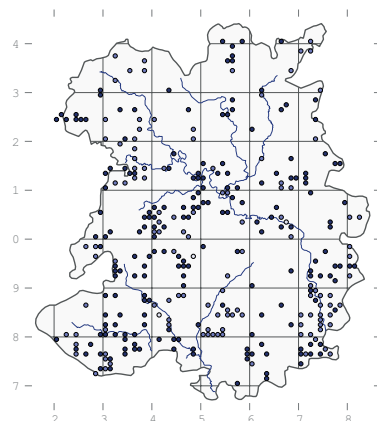
Recorded by P.M. Benoit & E.D. Pugh at Oswestry Railway Station in 1983.

***Vulpia bromoides* (L.) Gray**  
**Squirrel-tail Fescue**

Native. Widespread. Stable. Grassland and bare ground.

First records (as *Festuca bromoides*): Williams, c. 1800, 'by side of turnpike road on Bayston Hill; near Atcham bridge, etc, etc.'

In U1 *Rumex acetosella* grassland in many places, including Abbot's Castle Hill (Trueman, 2005), Attingham Park and Haughmond Hill. It also occurs on disturbed ground such as OV23 *Dactylis glomerata* in Dorrington Sand Quarry (Trueman, 1981) and a field of maize at Kynnersley Moor in 2009. It occurs in car parks, by roadsides, on railway cuttings and on walls throughout the county. It is found on Titterstone Clee up to about 420 m (SO590775, A.K. Thorne, 1999). A good place to look for it is around the quarry edge on the top of Sharpstones Hill, where it was first recorded by Leighton in 1841.



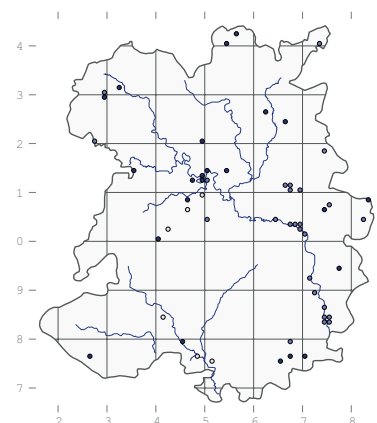
***Vulpia myuros* (L.) C. Gmelin**  
**Rat's-tail Fescue**

Archaeophyte. Scattered. Stable. Walls, railways, roadsides and waste ground.

First record (as *Festuca myuros*): Williams, c. 1800, 'old walls, Shrewsbury & Ludlow.'

Strongly associated with disturbed habitats and transport corridors, particularly in towns and along railways. It has been recorded in OV10 *Senecio vulgaris* community on waste ground in Newport (Trueman, 1981); OV22 *Taraxacum officinale* in Buildwas Sand Quarry (Trueman, 1982); and OV23 *Dactylis glomerata* on a road verge in Newport. Of 40 sites with habitat details, 18 are railways, 6 are quarries, 5 waste ground, 4 walls, 2

are gardens, airfields and road verges, and just one is an arable field – the last being a species-rich field at Pimhill Farm in 2006. Oswestry Railway Station was a good site for it between 1978 (M. Wainwright) and 1996 (M.E. Roberts) and W.A. Thompson recorded it often on the Severn Valley Railway in the 1980s. Subsequent records are more scattered in towns. Lowland: up to about 270 m at Selley (P.R. Green, 2010).



***Vulpia muralis* (Kunth) Nees.**

Under a bird table in a garden in Whitchurch (SJ531415, J.M. Hooson, det. F.H. Perring, R.M. Payne & T.B. Ryves, 1997). Not recorded in the wild.

***Cynosurus cristatus* L.**  
**Crested Dog's-tail**

Native. Widespread. Stable. Grassland.

First record: Williams, c. 1800, 'pastures, common.'

Very common in grasslands, including CG2 *Avenula pubescens* at Ballstone Quarry and Windmill Hill; CG3 *Bromopsis erecta* at Hilltop, Stokes's Barn (Trueman, 1981) and Stretton Westwood (D.H. Wrench, 1995); MG1e *Centaurea nigra* at Blackfriars Meadow and Roman Bank; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG5 *Festuca rubra* and MG6 *C. cristatus* everywhere; MG8 *Caltha palustris* at Crose Mere, Morton Pool and elsewhere; MG10 *Holcus lanatus* at Brown's Corner, Diddlebury (both Trueman, 1981) and Ruewood; U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005); and U4 *Agrostis capillaris* on Brown Clee.

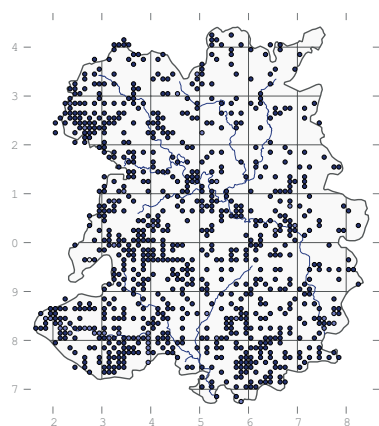
It is occasional in mires such as M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010); M22 *Juncus subnodulosus* at Crose Mere, Sweeney Fen and elsewhere; M23 *Juncus effusus* at Fenemere and Molverley Farm; and



*Briza media*



M35 *Montia fontana* on Caer Caradoc (Meade, 2010). It has also been found in OV21 *Plantago major* in a garden in Pant (Trueman, 1981).



### *Cynosurus echinatus* L.

#### Rough Dog's-tail

Just one record, by D.H. Robinson in 1925 near Edgmond – possibly an introduction or wool shoddy alien at Harper Adams agricultural college, where Robinson worked.

### *Puccinellia distans* (Jacq.)

Parl.

#### Reflexed Saltmarsh-grass

Native. Local. Increasing. Roadsides.

First record: Hamilton, 1886, Cherry Orchard, Shrewsbury (SHY).

In recent years this species has been spreading along roadsides in the county. It was first recorded in 2001 on the A5 at Overley Hill by J.L. Mason, and it is now quite frequent along the A5 as well as on the A49 and several other roads. It is native in Britain in saltmarshes around the coast.

### *Briza media* L.

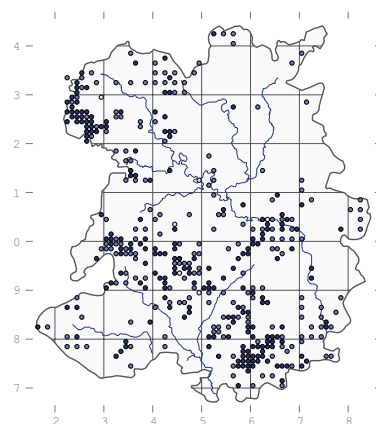
#### Quaking-grass

Native. Local. Decreasing. Axiophyte: calcareous grassland, quarries and flushes.

First record: Williams, c. 1800, 'pastures and meadows, common.'

Frequent in unimproved base-rich grasslands such as CG2 *Avenula pubescens* on Wenlock Edge, Llyncllys Hill and many other places; CG3 *Bromopsis erecta* at Ballstone Quarry, Stokes's Barn (Trueman, 1981) and Stretton Westwood (D.H. Wrench, 1995); MG1e *Centaurea nigra* at Roman Bank and Ropewalk Meadow; MG5 *Festuca rubra* throughout the county; MG8 *Caltha palustris* at Crose Mere and Morton Pool; MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981).

It also occurs in fens such as M10 *Carex dioica* at Hope Bowdler (P. Eades, 2010) and Trefonen Marshes; M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010), Hope Bowdler (Eades, 2010) and Trefonen; and M22 *Juncus subnodulosus* at Crose Mere and Morton Pool (Trueman, 1981). It is not restricted by altitude, occurring as high as 435 m in flushes on the east side of the Stiperstones (SO376997, C. Walker, 1986). A good place to see it is in Pattens Rock Quarry on Benthall Edge, where it was first recorded by W.H. Painter in 1904.



### *Briza maxima* L.

#### Greater Quaking Grass

A casual on a traffic island at Copthorne (SJ480125, R.M. Stokes, 1994), in a development site at Copthorne (SJ483128, 2007), on a roadside at Atcham (SJ539092, R.J. Swindells, 2009) and as a pavement weed in Shrewsbury (SJ500123, J. Shanklin, 2013). It is most likely a garden escape.

### *Poa annua* L.

#### Annual Meadow-grass

Native. Common. Stable. Grassland, edge habitats and waste places

First record: Williams, c. 1800, 'common, hic et ubique.'

Ubiquitous at the 1 km scale but quite restricted by habitat, on roadsides, tracks, disturbed soil, walls, amongst mosses on tree bases. It is most abundant in open vegetation, occurring in OV10 *Senecio vulgaris* in arable fields at Eudon George and Lower Faintree and waste ground at Newport (Trueman, 1981); OV13 *Capsella bursa-pastoris* on a verge at Priorslee (Trueman, 1981) and a field margin at Upton Cressett; OV14 *Urtica urens* at Rudge Heath (Trueman, 1981); OV15 *Anagallis arvensis* at Filletts Farm; OV18 *Polygonum aviculare* at Edgmond

(Trueman, 1981); OV20 *Sagina procumbens* on walls and pavements at Haughmond Abbey (Trueman, 1981) and Shrewsbury; OV21 *Plantago major* in a garden in Pant (Trueman, 1981); OV22 *Taraxacum officinale* at Buildwas Sand Quarry (Trueman, 1981) and ruins at Viroconium; OV23 *Dactylis glomerata* on road verges everywhere; OV24 *Urtica dioica* on the muddy banks of the Severn in Shrewsbury; OV30 *Bidens tripartita* on the margins of Aber Tanat Oxbox Lake (Trueman, 1981) and White Mere (M.J. Wigginton, 1979); OV31 *Rorippa palustris* by pools at Brown Moss and at Fenemere (Wigginton, 1979); OV32 *Ranunculus sceleratus* around Crose Mere and White Mere; and OV35 *Lythrum portula* at Newton Mere.

The other habitat in which it is quite significant is U1 *Rumex acetosella* grassland in places like Haughmond Hill, Lyth Hill and Prees Heath. Elsewhere it is a minor component of a lot of other vegetation types, including CG3 *Bromopsis erecta* at Ippikins Rock and Moelydd; CG7 *Thymus polytrichus* at Presthope; H12 *Vaccinium myrtillus* at Rhos Fiddle; MG1 *Arrhenatherum elatius* by an abandoned railway line in Shrewsbury; MG5 *Festuca rubra* at Treflach (Trueman, 1981); MG6 *Cynosurus cristatus* at Cramer Gutter; MG10 *Holcus lanatus* at Brown Moss; M23 *Juncus effusus* at Bomere Pool and Fenemere; M35 *Montia fontana* at Boiling Well (Trueman, 1981); U4 *Agrostis capillaris* at Rhos Fiddle; U20 *Pteridium aquilinum* on Titterstone Clee (A.K. Thorne, 1999); W4 *Betula pubescens* at Lin Can Moss; W5 *Alnus glutinosa* at Cole Mere; W6 *Salix × fragilis* at Sweat Mere (Packham, 1970); W8 *Fraxinus excelsior* at Blakeway Coppice; and W24 *Rubus fruticosus* scrub at High Rock (Trueman, 1981) and roadsides at Pentre Hodre.





## *Poa trivialis* L.

### Rough Meadow-grass

Native. Widespread. Stable. Grassland, woods, roadsides and waste ground.

First record: Williams, c. 1800, 'meadows, common.'

Common in a wide range of habitats, without any particularly distinctive niche. It is perhaps most characteristic of MG5 *Festuca rubra* grassland and W8 *Fraxinus excelsior* woods throughout the county.

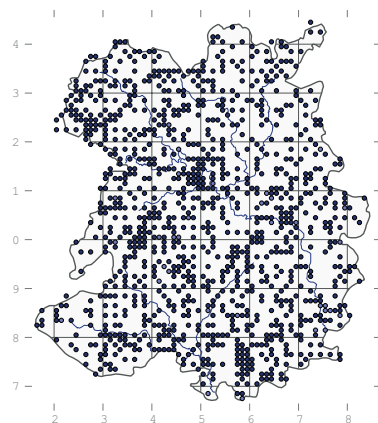
It has also been found in many other grassland types, including CG10 *Helianthemum nummularia* at Minton Batch (R. Tapper, 1983); MG1 *Arrhenatherum elatius* everywhere; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG6 *Cynosurus cristatus* in many places; MG8 *Caltha palustris* at Crose Mere, Melverley Farm and elsewhere; MG10 *Holcus lanatus* at Broncroft, Ruewood etc.; and U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005).

In mires it occurs in M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M22 *Juncus subnodulosus* at Crofts Mill (C. Walker, 1994), Sweeny Fen and elsewhere; M23 *J. effusus* in many places, including Haughmond Hill and Ruewood Pastures; M27 *Filipendula ulmaria* at Crose Mere; M35 *Montia fontana* at Boiling Well (Trueman, 1980), Caer Caradoc (R. Meade, 2010) and Lightspout Hollow (R. Tapper, 1983); and M36 *Chrysosplenium oppositifolium* in Poles Coppice.

It is frequent in open vegetation such as OV10 *Senecio vulgaris* waste ground at Newport (Trueman, 1981); OV13 *Capsella bursa-pastoris* fields at Upton Cressett; OV19 *Tripleurospermum inodorum* verges at Tong (Trueman, 1981); OV24 *Urtica dioica* at Abbot's Castle Hill (Trueman, 2005); OV25 *Cirsium arvense* field margins at Kingshead; and OV26 *Epilobium hirsutum* at Longford and by rivers throughout.

It is not uncommon in swamps such as S11 *Carex vesicaria* at The Long Bog; S12 *Typha latifolia* at Shrawardine Pool; S14 *Sparganium erectum* at Berrington Pool; S26 *Phragmites australis* at Cole Mere; and S27 *Comarum palustre* at Berrington Pool. Most woods have at least a small amount of *Poa trivialis*, including W1 *Salix cinerea* at Calcott Moss; W4 *Betula pubescens* at Sweat Mere; W5 *Alnus glutinosa* at Brownheath Moss, Crose Mere and elsewhere; in all stands

of W6 *Salix × fragilis*; W7 *Lysimachia nemorum* at the Ercall (Trueman, 1981), Upper Vessons, etc.; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Bannister's Coppice, Fron Wood and Haughmond Hill; and W24 *Rubus fruticosus* hedges at Abdon.



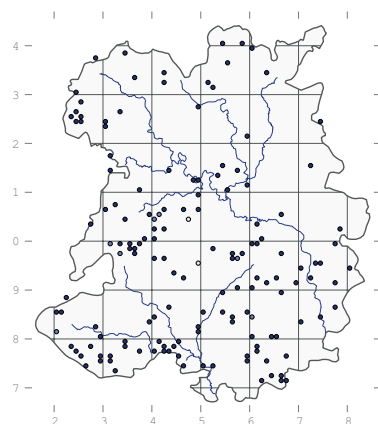
## *Poa humilis* Ehrh. ex Hoffm.

### Spreading Meadow-grass

Native. Widespread. Stable. Grassland.

First record: R.D. Benson, 1895, 'sand pit near Stapleton.'

This plant has had varying taxonomic treatment and is sometimes considered to be a subspecies of *Poa pratensis* or even just a synonym of it. Recording has similarly varied, with some believing that it is more common than *P. pratensis*, but many people do not record it at all. For those who do recognise it, it has been found in CG2 *Avenula pubescens* at Craig Sychtyn; MG5b *Galium verum* on Wenlock Edge; MG8 *Caltha palustris* at Melverley Farm; M23 *Juncus effusus* at Brook Vessons and Ruewood Pastures (P. Welsh, 1981); U1 *Rumex acetosella* at Attingham Park and Prees Heath; and U4 *Agrostis capillaris* at Rhos Fiddle.



## *Poa pratensis* L.

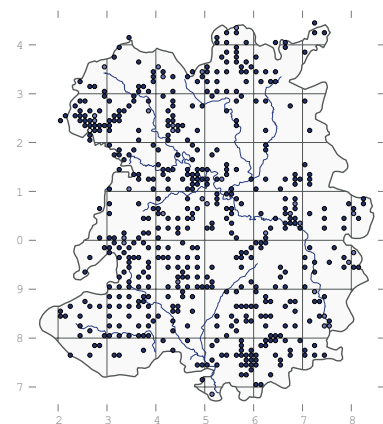
### Smooth Meadow-grass

Native. Widespread. Stable. Grassland, bare ground, rocks and open woodland.

First record: Williams, c. 1800, 'meadows, pastures and walls, common.'

An occasional component in a wide variety of grassland types and in grassy patches in other habitats. It has been recorded in CG2 *Avenula pubescens* at Jones's Rough and Windmill Hill; CG3 *Bromopsis erecta* at Stokes's Barn and Hilltop; MG5 *Festuca rubra* in many places; MG7 *Lolium perenne* at Rudge (Trueman, 1981); MG8 *Caltha palustris* at Morton Pool (D.H. Wrench, 1991); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* on Brown Clee; U1 *Rumex acetosella* on Abbot's Castle Hill and Titterstone Clee; and U4 *Agrostis capillaris* at Shelve (the last four all by Trueman, 1981-2005);

It often persists in open woodland such as W5 *Alnus glutinosa* at Blake Mere (Wigginton, 1979); W6d *Sambucus nigra* by the Severn at Shrewsbury Castle; W8 *Fraxinus excelsior* hedges along a green lane at Round Oak; W16 *Quercus petraea* at Oaks Wood (Trueman, 1981); and W24 *Rubus fruticosus* scrub at High Rock, Bridgnorth (Trueman, 1981) and on a dry stone wall at Stevenshill. In more open situations it has been recorded in OV14 *Urtica urens* arable fields at Rudge Heath and OV21 *Plantago major* in a garden in Pant (both Trueman, 1981); OV23 *Dactylis glomerata* amenity grassland at Shelton; and OV31 *Rorippa palustris* community on the margin of Fenemere (Wigginton, 1979). In its wettest habitats, Wigginton (1979) even found it in S4 *Phragmites australis* reedbeds at Sweat Mere and S27 *Comarum palustre* at Bomere Pool.

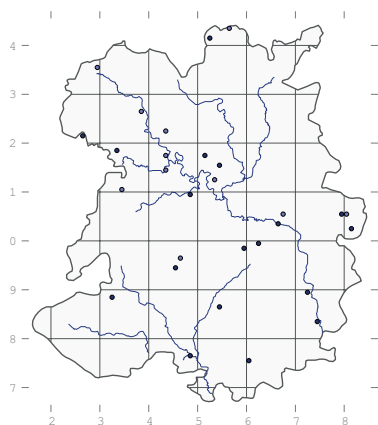


***Poa angustifolia* L.****Narrow-leaved Meadow-grass**

Native. Scattered. Stable. Walls, rocks, roadsides.

First record: Sinker, 1970, 'crevices at the base of Mytton Bridge over the River Perry.'

In limestone quarries such as Lea Quarry, Llanymynech Rocks and Pattens Rock Quarry (S. Vaughan, 2008); on walls at Haughmond Abbey, in Church Stretton and at Broncroft Mill; on bridges such as the one over the Teme at Bromfield; and on bare ground on roadsides, as along the A5 at Bayston Hill.

***Poa chaixii* Vill.****Broad-leaved Meadow-grass**

Neophyte. Rare. Decreasing. Woods.

First record: Sinker, 1962, Pontesford Hill (SHY).

Planted as cover in pheasant woods. It still occurs at Pontesford Hill (SJ409054) on a pathside bank in W8 *Fraxinus excelsior* plantation of *Castanea sativa*, *Larix decidua* other forestry trees, and in parkland by the Mere (SJ405354, D.H. Wrench, 2013). It was formerly known in pheasant coverts at Mytton (M.J. Connell, 1975) and Cound Hall (P. Parker, 1978).

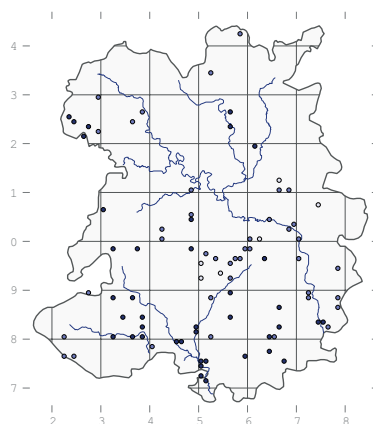
***Poa compressa* L.****Flattened Meadow-grass**

Native. Scattered. Stable. Axiophyte: walls and limestone quarries.

First record: Williams, c. 1800, 'old walls and meadows.'

A perennial of well-drained, calcareous substrates such as walls and old quarries where it often grows in clumps on bare rock with no competition. Its most natural habitat is CG2 *Avenula pubescens* grassland, as in an old quarry at Craig Sychtyn and on the scree at Jones's Rough. It is much more common on walls such as the fine

old stone walls around Culmington Church and on bridge parapets, as at Ashford Bridge. Sometimes it is recorded on railway ballast in places like the old Oswestry Railway Station (E.D. Pugh, 1983) and the Severn Valley Railway at Upper Forge (W.A. Thompson, 1981). Although it is generally lowland, it has been recorded as high as 420 m along a track made from limestone chippings on the Stiperstones (SO370980, H.J. Crouch, 2010) and at about the same height in a quarry on Titterstone Clee (SO594766, D.H. Wrench, 2004).

***Poa palustris* L.****Swamp Meadow-grass**

Neophyte. Rare.

Recorded at Lower Wigmore Clay Pits (Sinker & Rutter, 1961, SHY) and The Yesters (Perring, 1965).

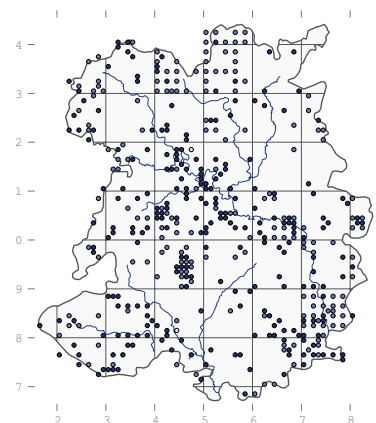
***Poa nemoralis* L.****Wood Meadow-grass**

Native. Local. Stable. Woods, hedgebanks and walls.

First record: Williams, c. 1800, 'woods.'

A perennial grass of dry, often shaded and rather bare soils, usually on steep slopes in woods, by roads and even on walls, rock outcrops or scree. It grows in loose clumps which are distinctive and rather ornamental, which leads to it being included in some seed mixes. It is mainly a plant of W8 *Fraxinus excelsior* in places like Haughmond Hill, Redhill Coppice and New England, but it has also been recorded in W21 *Crataegus monogyna* on Earl's Hill, W24 *Rubus fruticosus* at High Rock, Bridgnorth (Trueman, 1981), and even W5 *Alnus glutinosa* at Crose Mere (M.J. Wigginton, 1979). There are some records of it in W16 *Quercus petraea* woods such as Oaks Wood, Coed-detton and Resting Hill. At Holloway Rocks Trueman (1981) recorded it in OV39 *Asplenium*

*trichomanes* vegetation at an altitude of 380 m. Sometimes it turns up on walls such as the ones by the English Bridge in Shrewsbury. A good place to see it is on the wooded slope above the Old River Bed in Shrewsbury or along the Ellesmere Road where it cuts through Cross Hill.

***Dactylis glomerata* L.****Cock's-foot**

Native. Widespread. Stable. Grassland, scrub and woodland edges.

First record: Williams, c. 1800, 'meadows and shady places, common.'

Ubiquitous in MG1 *Arrhenatherum elatius* grassland on road verges, field margins and waste places. It is also a component of several grassland types, especially MG5 *Festuca rubra* meadows, where it is always at least a minor component of the sward. Elsewhere, it is recorded in CG2 *Avenula pubescens* at Craig Sychtyn and Craig-llwyn Quarry; CG3 *Bromopsis erecta* at Lea Quarry and Stretton Westwood (D.H. Wrench, 1995); MG4 *Sanguisorba officinalis* at Lord's Meadows (Wrench, 1995); MG6 *Cynosurus cristatus* at Earl's Hill and Melverley Farm; MG8 *Caltha palustris* at Morton Pool (Wrench, 1991) and Ruewood (Trueman, 1980); and MG9 *Deschampsia cespitosa* at Oss Mere.

The only mire community for which we have records is M22 *Juncus subnodulosus* fen-meadow at Morton Pool (Trueman, 1984) and Sweeny Fen. On riverbanks it extends into OV26 *Epilobium hirsutum* vegetation, as at Longford, so long as it is not too wet. On Prees Heath it is rare in U1 *Rumex acetosella* grassland and at Cwm Collo it is a component of U4 *Agrostis capillaris* on roadside verges. It often extends into woods, where it grows on the margins and along rides. It is most common in open W8 *Fraxinus excelsior* woodland such as at Bushmoor Coppice, on in hedges of W8 as at Henley, but it is also recorded

in W5 *Alnus glutinosa* at Oss Mere; W6 *Salix* × *fragilis* at Marton Pool, Chirbury; W10 *Quercus robur* at Nant-y-myssels; W23 *Ulex europaeus* at Old Oswestry; and W24 *Rubus fruticosus* roadside banks at Mellin-y-Grogue and Day Houses. It has probably increased as a consequence of human activity, and it may be continuing to do so, but it is too widespread for this to show up on the maps.



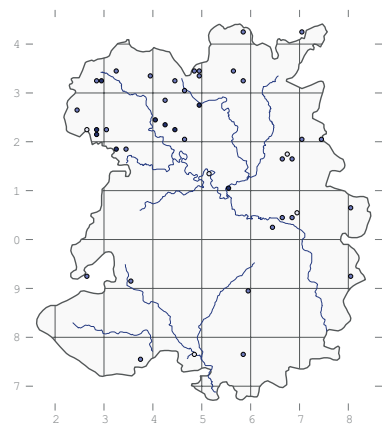
### *Catabrosa aquatica* (L.) P. Beauv.

#### Whorl-grass

Native. Scarce. Declining. Axiophyte: canals, ponds, ditches.

First record: Williams, c. 1800, 'ditches, not uncommon.'

In ditches and pond margins in river valleys and around some of the meres. At Ruewood it grows in MG10 *Holcus lanatus* grassland and MG13 *Alopecurus geniculatus* (Trueman, 1980). There are also recent records for it at Fenemere (P. Parker, 1993), The Berth, Pentre-Clawdd, and Plas Cerrig (A.K. Thorne, 2003). The only record of it in a canal was by E.A. Wilson in 1951, in the Tetchill Branch of the Ellesmere (Llangollen) Canal. It seems to be declining, especially in the south of the county.



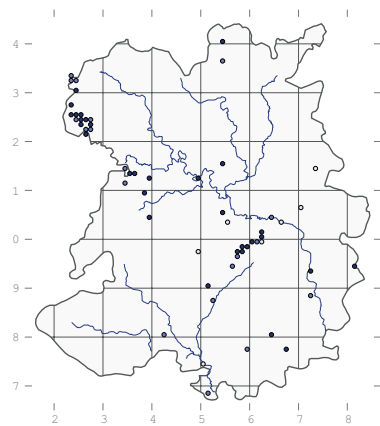
### *Catapodium rigidum* (L.) C.E. Hubb.

#### Fern-grass

Native. Local. Stable. Axiophyte: grassland, quarries, walls and rock exposures.

First record (as *Sclerochloa rigida*): W. Withering, 1787, 'near the mill-pool, Lilleshall.'

On dry, stony or sandy substrates, usually but not exclusively in limestone areas. It is recorded in CG3 *Bromopsis erecta* on rock outcrops at Ballstone Quarry and Lea Quarry on Wenlock Edge; CG7 *Thymus polytrichus* in Farley Quarry and on Moelydd; U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005) and Lilleshall Quarry; and W24 *Rubus fruticosus* at High Rock, Bridgnorth (Trueman, 1981). In towns it grows on walls – there has been a patch on a wall below Marine Terrace in Shrewsbury in recent years, but it is not common.



### *Catapodium marinum* (L.) C.E. Hubb.

#### Sea Fern-grass

'By the side of the A5 near Montford Bridge' (SJ433147, B.J. Laney, 2009, BIRM).

[*Sesleria caerulea* (L.) Ard., Blue Moor-grass

Recorded by H. Spare at Oakly Park (Leighton, 1841).]

### *Avenula pubescens* (Huds.) Dumort.

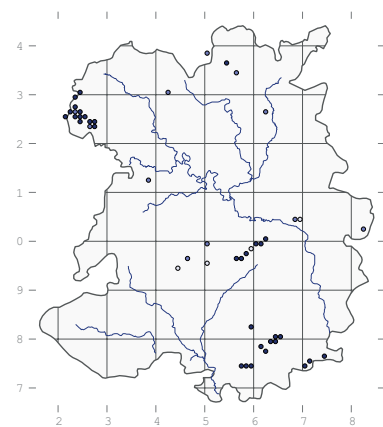
#### Downy Oat-grass

Native. Local. Stable. Axiophyte: grassland.

First record: Leighton, 1841, 'lime quarries near the Five Chimnies, Wenlock Edge.'

A characteristic component of CG2 *A. pubescens* grassland in places like Ballstone Quarry, Craig Sychtyn, Dolgoch Quarry and Windmill Hill.

It also persists in smaller quantities in CG3 *Bromopsis erecta* at Hilltop Meadow and The Foxholes; MG5 *Festuca rubra* at Knowbury, Stocking Meadows, Treflach (all Trueman, 1981) and Wenlock Edge Car Park.



### [*Avenula pratensis* (L.) Dumort., Meadow Oat-grass

A few records, seemingly made with care but not confirmed: 'in meadows at Linley' (SO702984, W.E. Hutton, 1978), Westbury Railway Cutting (SJ346109, B. Carleton, 1979), 'verges of paths leading to old quarry, Eardington' (SO726903, Hutton, 1979), Oreton (SO68K, J.J. Day, 1993) and Bryn Uchaf (SJ218253, G.M. Stone, 1996).]

### *Arrhenatherum elatius* (L.) P. Beauv.

#### False Oat-grass

Native. Widespread. Stable. Grassland, roadsides, scrub, fens and riverbanks.

First record (as *Holcus avenaceus*): Williams, c. 1800, 'Hedges, common.'

Common on road verges and neglected grasslands, where infrequent mowing creates ideal conditions for the growth of tall, clump-forming grasses such as this. The majority of sites are MG1 *Arrhenatherum elatius* grassland, where the typical MG1a *Festuca rubra* subcommunity is relatively species-rich and inoffensive, and occurs throughout the county. It has a notable variant in the *Chamerion angustifolium* community, which is easily spotted along Wenlock Edge in high summer. Agricultural areas often have MG1b *Urtica dioica*, which is very rank. MG1c *Filipendula ulmaria* is widespread in roadside ditches and on riverbanks and drainage ditches. MG1d *Pastinaca sativa* has not yet been formally recorded in the county but is probably present along the M54 around Telford and at Alveley. The most interesting and valuable *Arrhenatherum* grassland is MG1e *Centaurea nigra*, which is a semi-



natural variant commonly found in old meadows and patches of scrub, especially in limestone grasslands. It has been recorded in Ropewalk Meadow, Blackfriars Meadow in Shrewsbury and on Windmill Hill. It might easily be viewed as a rank edge to a grassland, and of little value, but it forms the natural boundary between calcareous grassland and woodland edge, and several uncommon species tend to be found in such areas (the only plants of *Filipendula vulgaris* and *Agrimonia procera* on Windmill Hill occur in this vegetation).

Although *A. elatius* forms a distinctive vegetation community of its own, it is also a component of a variety of other communities. It has been recorded in CG2 *Avenula pubescens* at Dolgoch Quarry and Moelydd; CG3 *Bromopsis erecta* at Lea Quarry and Hilltop Meadow; CG4 *Thymus polytrichus* in Nantmawr Quarry; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG5 *Festuca rubra* at Guilden Down and Stretton Westwood (D.H. Wrench, 1995); MG7e *Plantago lanceolata* at Rudge (Trueman, 1981); MG8 *Caltha palustris* at Ruewood (Trueman, 1980); and MG9 *Deschampsia cespitosa* at Hill Houses and Oss Mere.

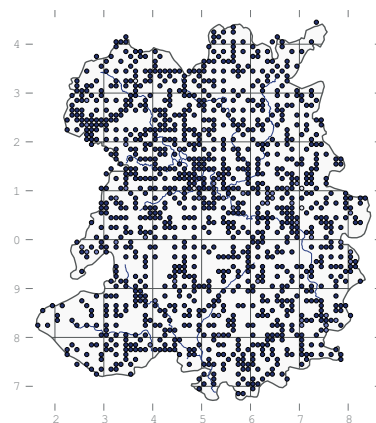
It is less often thought of as a mire and wetland plant, but it is recorded in M22 *Juncus subnodulosus* at Sweeny Fen; and M27 *Filipendula ulmaria* at Berrington Pool and Marl Allotment.

It is perhaps most common on disturbed ground, such as OV21 *Plantago major* in a garden in Pant; OV23 *Dactylis glomerata* on verges at Uppington and Shipley (the last three all Trueman, 1981); OV24 *Urtica dioica* at Abbot's Castle Hill (Trueman, 2005); OV25 *Cirsium arvense* in fields at Kingshead and Norton (Trueman, 1981); OV26 *Epilobium hirsutum* along rivers at Longford, Wollerton and elsewhere; and OV37 *Festuca ovina* at Snailbeach (Trueman, 1981).

There is just one record of it in U1 *Rumex acetosella*, on Earl's Hill (Trueman, 1984). It is surprisingly rare in woodlands, evidently preferring the margins and the paths, and it has been recorded in W8 *Fraxinus excelsior* in Blakeway Coppice, Haughmond Hill and elsewhere; W10 *Quercus robur* at Muxton Bridge (Trueman, 1981) and Oss Mere; and more commonly in hedges of W23 *Ulex europaeus* and W24 *Rubus fruticosus* scrub throughout the county.

*Arrhenatherum elatius* var. *bulbosum* (Willd.) St-Amans is a recognizable

variant that has been recorded at Church Stretton (R.D. Benson, 1904), Meole Brace (Leighton, 1841), Nantmawr (A.O. Chater, 2002), Nills Hill Quarry, Preston Montford, Stirchley (W.H. Painter, 1900) and Sutton Maddock (Painter, 1894).



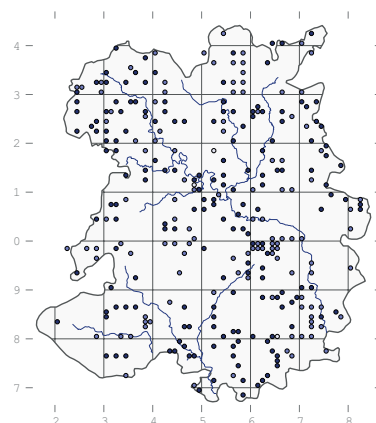
### *Avena fatua* L.

#### Wild Oat

Archaeophyte. Widespread. Stable. Arable fields, roadsides, waste ground.

First record: Williams, c. 1800, 'cornfields, common.'

A common weed in arable fields, sometimes occurring in abundance amongst crops, but more often in small quantities around gateways, along tracks and by roadsides.



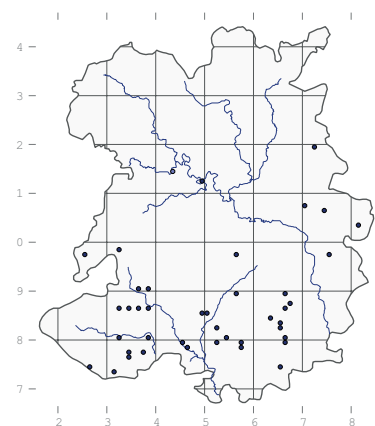
### *Avena sativa* L.

#### Oat

Archaeophyte. Scattered. Increasing. Field margins and roadsides.

First record: J.M. Way, 1963, Preston Montford (ABRN).

An agricultural weed, apparently increasing in recent years although it is never abundant. There were no records of it in Sinker's Flora, although it is mentioned as a plant of middens. Since the 1990s it has been found to be frequent in the south of the county, and it turns up in places such as muddy banks by the Severn in Shrewsbury.



### *Trisetum flavescens* (L.)

P. Beauv.

#### Yellow Oat-grass

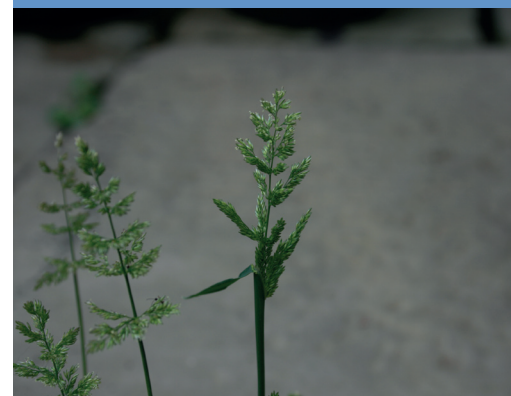
Native. Local. Stable. Axiophyte: grassland.

First record (as *Avena flavescens*): Williams, c. 1800, 'meadows and pastures, common.'

Occasional in unimproved, slightly calcareous grassland, including CG2 *Avenula pubescens* in places like Ballstone Quarry, Craig Sychny and Moelydd; CG3 *Bromopsis erecta* at the Foxholes, Hilltop, and Stretton Westwood (D.H. Wrench, 1995); CG7 *Thymus polytrichus* on Moelydd; MG1 *Arrhenatherum elatius* on roadsides such as at Brockton; MG1e *Centaurea nigra* in places like Blackfriars and Ropewalk meadows; MG5 *Festuca*

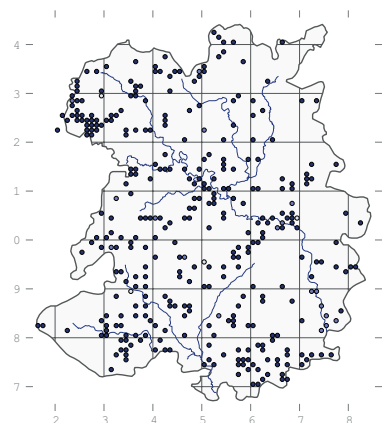


*Calamagrostis canescens* at Morton Pool



*Polypogon viridis*

*rubra* throughout; MG9 *Deschampsia cespitosa* at Easthope Wood; and U1 *Rumex acetosella* at Abbot's Castle Hill (Trueman, 2005). It extends into a few wetland communities such as M6 *Carex nigra* on Stapeley Hill (Trueman, 1981) and M22 *Juncus subnodulosus* at Sweeny Fen.



### *Deschampsia cespitosa* (L.)

P. Beauv.

#### Tufted Hair-grass

Native. Widespread. Stable. Wet woods, grassland, fens.

First record (as *Aira cespitosa*): Williams, c. 1800, 'moist meadows, common.'

Characteristic of wet pastures and woodland, especially MG9 *D. cespitosa* grassland at Cole Mere, Crose Mere, Easthope Wood and Hill Houses; and W8c *D. cespitosa* ash woodland in places like Earl's Hill.

It is also recorded in a variety of other grasslands, including CG2 *Avenula pubescens* in Pattens Rock Quarry (Trueman, 1981); CG3 *Bromopsis erecta* at Hilltop Meadow (D.H. Wrench, 1994); MG1c *Filipendula ulmaria* on a track side at the Speller; MG5 *Festuca rubra* at Haughmond Hill, Ruewood Pastures and elsewhere; MG6 *Cynosurus cristatus* at Molverley Farm; MG8 *Caltha palustris* at Morton Pool, Ruewood and elsewhere; MG10 *Holcus lanatus* at Ruewood; and U5 *Nardus stricta* on Titterstone Cleve (A.K. Thorne, 1999).

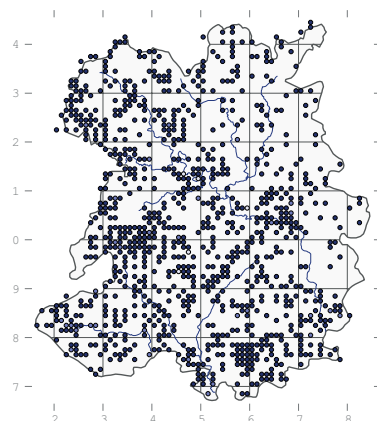
In mires it is found in M22 *Juncus subnodulosus* at Crose Mere, Porth-y-waen (Trueman, 1981) and Sweeny Fen; M23 *Juncus effusus* throughout; M24 *Cirsium dissectum* at Cole Mere; M25 *Molinia caerulea* at Shelve Pool; and M27 *Filipendula ulmaria* at Marl Allotment, Tunstall Wood and the Mere at Ellesmere.

Sometimes it is found in OV26 *Epilobium hirsutum* tall-herb by rivers or in wetlands such as the

swamp above Berrington Pool (M.J. Wigginton, 1979). There are records of it in swamps such as S11 *Carex vesicaria* and S12 *Typha latifolia* at the Long Bog; S14 *Spartanium erectum* at Betton Pool (Wigginton, 1979); S26 *Phragmites australis* at Cole Mere; and S27 *Comarum palustre* at Berrington Pool (Wigginton, 1979) and the Mere at Ellesmere.

It is present in most wet woods, including W1 *Salix cinerea* carr in places like the Mere; W4 *Betula pubescens* on Haughmond Hill; W5 *Alnus glutinosa* at Marton Pool, Chirbury, and White Mere; W6 *Salix* × *fragilis* by the Borle Brook, in Loamhole Dingle and at Redhill Coppice; W7 *Lysimachia nemorum* in Birchen Park, Upper Vessons and below the Excall (Trueman, 1981); W8 *Fraxinus excelsior* throughout; W9 *Sorbus aucuparia* in Betchcott Hollow; and W10 *Quercus robur* in places like Bannister's Coppice and Stanway Coppice.

The subspecies *cespitosa* is widespread; ssp. *parviflora* (Thuill.) Dumort. has been recorded in a few places, such as Marrington Dingle (Perring, 1989).



### *Deschampsia setacea* (Huds.) Hack.

#### Bog Hair-grass

In the *Journal of Botany*, 1895, p. 56, G.C. Druce wrote: '*Deschampsia discolor* R. & S. in Salop.—Last June, at the meeting of the Midland Union of Natural History Societies at Ellesmere, Mr F. Bellamy, of Oxford, collected some specimens of plants, which he brought me to look over. Among them was a form of the above grass, which he gathered near the mere.' There was certainly suitable habitat at the Moors at some point, but the specimen has not been traced. Another specimen by T. Butler from Blake Mere (1879) in SHY, mentioned by Sinker (1985, p. 315) was re-determined as *D. flexuosa* by Perring.

### *Deschampsia flexuosa* (L.)

Trin.

#### Wavy Hair-grass

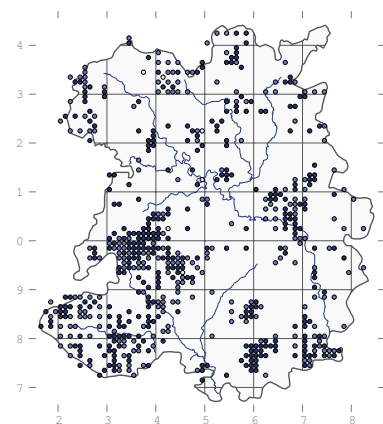
Native. Widespread. Stable. Axiophyte: heathland, upland grassland, acid woods.

First records (as *Aira flexuosa*): Williams, c. 1800, 'about Pulverbatch and Stiperstones Hills; Shelve; moors about Ellesmere; Harmer Hill and Pimhill; Haghmon Hill.'

In a variety of habitats on well-drained, acid soils, usually in full sunlight or partial shade. It is common in H8 *Ulex gallii* in places such as Cramer Gutter and the Stiperstones; H9 *Deschampsia flexuosa* at Lower Short Ditch and the Stiperstones; and H12 *Vaccinium myrtillus* on the Long Mynd (C.M. Owen, 1983), Rhos Fiddle and the Stiperstones.

Sometimes it is found in MG5c *Danthonia decumbens*, as at Cleeton St Mary (D.H. Wrench, 1994) and it is frequent in drier stands of M25 *Molinia caerulea* in places such as Steel Heath. It is occasional in U1 *Rumex acetosella* in both upland and lowland situations, as on Earl's Hill and Prees Heath; and it is of course the dominant grass in U2 *D. flexuosa* in places like Brown Moss and Earl's Hill. It is recorded as a component of U4 *Agrostis capillaris* at Rhos Fiddle and of U5 *Nardus stricta* at Rhos Fiddle, the Stiperstones and Titterstone Cleve.

Sometimes it is abundant in woodlands, including drier stands of W4 *Betula pubescens* on Haughmond Hill; W10 *Quercus robur* at Hope Coppice; and especially in W16 *Q. petraea* woods wherever they occur. When the W17 *Leucobryum glaucum* woodland at Oaks Wood was felled, *D. flexuosa* quickly spread from being occasional to dominant in the dry, sunny clearings. At Old Oswestry a similar process has occurred, leaving it frequent in slowly regenerating W23 *Ulex europaeus* scrub.





***Holcus lanatus* L.****Yorkshire-fog**

Native. Widespread. Stable. Grassland, woods and swamps.

First record: Williams, c. 1800, 'meadows, common.'

Very common in a wide range of grasslands, most abundantly in MG10 *H. lanatus* rush-pasture in places such as a ditch at Broncroft, pools at Brown Moss, and a flood meadow at Ruewood Pastures.

It is also found in CG2 *Avenula pubescens* at Dolgoch Quarry; CG3 *Bromopsis erecta* at Hilltop and Lea Quarry; MG1 *Arrhenatherum elatius* on road verges and the edges of meadows everywhere; MG4 *Sanguisorba officinalis* at Lord's Meadows; in all stands of MG5 *Festuca rubra* and MG6 *Cynosurus cristatus*; MG7 *Lolium perenne* in many places, including Rudge (Trueman, 1981); MG8 *Caltha palustris* at Morton Pool, Ruewood and elsewhere; MG9 *Deschampsia cespitosa* at Easthope Wood, Oss Mere and many other sites; U1 *Rumex acetosella* at Attingham Park, Abbot's Castle Hill (Trueman, 2005) and Prees Heath; U2 *Deschampsia flexuosa* at Brown Moss; U4 *Agrostis capillaris* at Cwm Collo; and U5 *Nardus stricta* on Titterstone Clee (A.K. Thorne, 1999).

It is occasional in various fen and mire communities, including M6b *Carex nigra* on Stapeley Hill (Trueman, 1981); M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010) and Trefonen Marshes; M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Sweeny Fen, Crose Mere and elsewhere; M23 *Juncus effusus* everywhere; M24 *Cirsium dissectum* at Cole Mere; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); M27 *Filipendula ulmaria* at Berrington Pool and Cole Mere; and M35 *Montia fontana* on Caer Caradoc (Meade, 2010).

Sometimes it is quite abundant on disturbed soils such as field margins and waste ground, and it has been recorded in OV10 *Senecio vulgaris* at Newport; OV19 *Tripleurospermum inodorum* at Tong; OV22 *Taraxacum officinale* at Buildwas; OV23 *Dactylis glomerata* at Cosford, Dorrington and Newport (all Trueman, 1981); OV24 *Urtica dioica* on Abbot's Castle Hill (Trueman, 2005); OV25 *Cirsium arvense* at Norton, Stockton (Trueman,

1981); OV26 *Epilobium hirsutum* on many river banks and by Berrington Pool (M.J. Wigginton, 1979); OV27 *Chamerion angustifolium* at Prees Heath; OV30 *Bidens tripartita* at Black Coppice and Marton Pool, Chirbury (Wigginton, 1979); and OV32 *Ranunculus sceleratus* by the River Roden at Tilley.

It is also occasional in some swamp communities, including S11 *Carex vesicaria* and S12 *Typha latifolia* at the Long Bog, Berrington; S14 *Sparganium erectum* at Brown Moss; S22 *Glyceria fluitans* in the Coalport Canal (Trueman, 1981); and S27 *Comarum palustre* at Berrington Pool and the Mere at Ellesmere.

In woods, *H. lanatus* is frequent except on the more acid soils. It has been recorded in W1 *Salix cinerea* at Berrington Pool; W4 *Betula pubescens* at Calcott Moss and Haughmond Hill and Sweat Mere (Trueman, 1980); W5 *Alnus glutinosa* around many of the meres; W6 *Salix* × *fragilis* at Hencott Pool and Loamhole Dingle; W7 *Lysimachia nemorum* at Brook Vessons; W8 *Fraxinus excelsior* in many places; W9 *Sorbus aucuparia* in Betchcott Hollow; W10 *Quercus robur* at Bannister's Coppice and Bushmoor Coppice; W16 *Q. petraea* at Oaks Wood. It is even more common in scrub vegetation such as W23 *Ulex europaeus* scrub at Old Oswestry and hedges at Mellin-y-Groeg; and W24 *Rubus fruticosus* scrub everywhere.

***Holcus mollis* L.****Creeping Soft-grass**

Native. Widespread. Stable. Woods, grassland, swamps and arable fields.

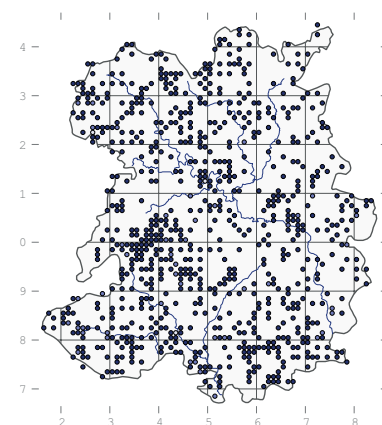
First record: Williams, c. 1800, 'woods, pastures & hedges, common.'

Most characteristically in acid woods, where it is sometimes the main component of the ground flora. It is recorded in W4 *Betula pubescens* at Bomere Pool and Haughmond

Hill; W5 *Alnus glutinosa* at Black Coppice and Sweat Mere (J. Mallabar, 1998); W7 *Lysimachia nemorum* at the Ercall (Trueman, 1981); W8 *Fraxinus excelsior* at Haughmond Hill (Trueman, 1981), Wilderhope and elsewhere; W10 *Quercus robur* in many places; W16 *Q. petraea* at Oaks Wood; W17 *Leucobryum glaucum* at Oaks Wood and Vron Wood; and W21 *Crataegus monogyna* hedges and scrub, as on the slopes of Earl's Hill.

It is also recorded in damp grassland and flushes such as MG1 *Arrhenatherum elatius* on the verge by Preston Montford (S.T. Geikie, 2008); MG10 *Holcus lanatus* at Brown's Corner (Trueman, 1981) and Hope Coppice; M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983); M23 *Juncus effusus* at Gogbatch (C.M. Owen, 1983) and Rhos Fiddle; M27 *Filipendula ulmaria* at Lower Netchwood (Trueman, 1981) and Marl Allotment; and M35 *Montia fontana* at Wild Moor and Carding Mill Valley (both Tapper, 1983).

Elsewhere, it is recorded in S14 *Sparganium erectum* swamp at Betton and Berrington pools (both Wigginton, 1979); it is common in U20 *Pteridium aquilinum*, as on Titterstone Clee (Thorne, 1999); and as an arable weed in vegetation such as OV10 *Senecio vulgaris* in fields of rape at Lower Faintree. Although it usually forms a low sward, it can straggle up through tall grasses and scrub, and plants as tall as 2.29 m have been observed in scrubby MG1 grassland in a green lane at Birdsgreen (SO773850, 2011). One of the best places to see it is on Lawrence's Hill, where Packham studied the woods in the 1970s (Tobin *et al.* 1987) and in places it forms a continuous sward.



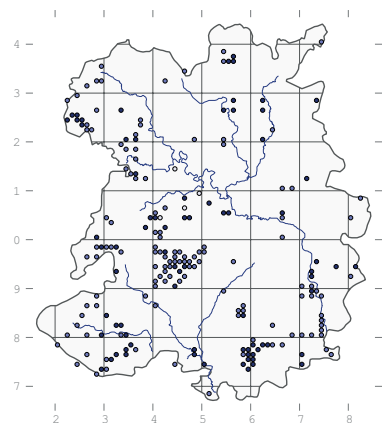


## *Aira caryophyllea* L.

### Silver Hair-grass

Native. Local. Stable. Axiophyte: grassland.

First record: Williams, c. 1800, 'hills and dry banks.'



A spring ephemeral in short grassland and on bare rock. Its main habitat is U1 *Rumex acetosella* grassland in places like Abbot's Castle Hill (Trueman, 2005) and Prees Heath; and it has been recorded in CG2 *Avenula pubescens* at Craig Sychtyn. It is quite common in quarries such as Dhustone Quarry (N. Button, 2006) and Old Farm Quarry, Stapleton (A.K. Thorne, 2006), and on railways such as an old railway yard at Woofferton (M.M. Webster, 1975) and along the Severn Valley Railway (W.A.



*Alopecurus aequalis* at Brown Moss



*Bromus secalinus*

Thompson, 1981). It is easily missed owing to its early flowering period and small size, so may not be declining as much as the map seems to suggest. It is not restricted by altitude, occurring close to the summit of Titterstone Clee, where it was first recorded by J.B. Duncan in 1903.

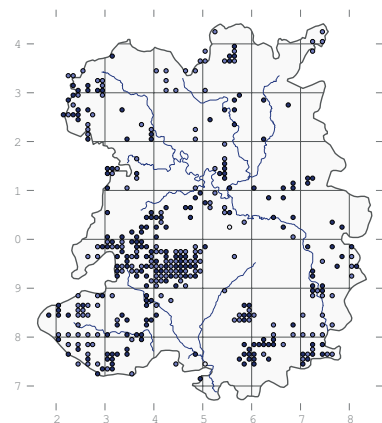
## *Aira praecox* L.

### Early Hair-grass

Native. Local. Stable. Axiophyte: grassland.

First record: Williams, c. 1800, 'hills, dry banks and rocky grounds; on top of Haghmon hill, plentifully.'

In short grassland and grass-heath, mainly on the hills. It is largely confined to, and almost ubiquitous in, U1 *Rumex acetosella* grassland throughout the county, including such places as Attingham Park, Haughmond Hill and the Long Mynd, usually in natural grassland but also on the spoil heaps at Titterstone Clee and Ketley (both Trueman, 1981). Elsewhere it is recorded in CG2 *Avenula pubescens* at Craig Sychtyn, CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and H8 *Ulex gallii* in Carding Mill Valley (Trueman, 1981). In the lowlands it is frequent on Prees Heath and it was recorded on Brown Moss between 1962 (Sinker) and 1992 (Trueman). A good place to look for it is on the southern slopes of Earl's Hill, where it was first recorded by Leighton in 1841. It is not restricted by altitude, occurring on the summits of all the higher hills.



## *Anthoxanthum odoratum* L.

### Sweet Vernal Grass

Native. Widespread. Stable. Grassland and woodland.

First record: Williams, c. 1800, 'common.'

In ancient species-rich grasslands, woodland rides and even in swamps and fens. It is occasional in unimproved calcareous grassland such

as CG2 *Avenula pratensis* at Craig-llwyn Quarry and CG10 *Helianthemum nummularia* on Llynclys Hill; and sometimes it turns up in heathlands such as H8 *Ulex gallii* at Prees Heath.

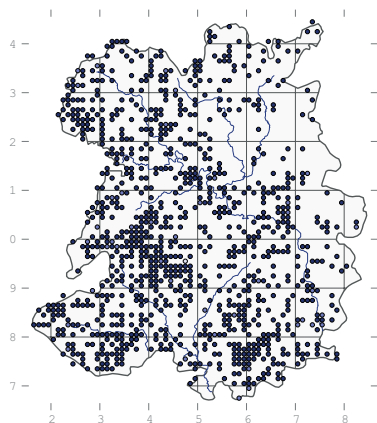
It is most abundant in mesotrophic grassland, and has been recorded in MG1 *Arrhenatherum elatius* at Roman Bank, Ropewalk Meadow and elsewhere; MG4 *Sanguisorba officinalis* at Lord's Meadows; MG5 *Festuca rubra* everywhere; MG6 *Cynosurus cristatus* Becks Field, Melverley Farm and many other places; in all stands of MG8 *Caltha palustris*; MG9 *Deschampsia cespitosa* at Hill Houses; and MG10 *Holcus lanatus* at Brown's Corner, Larkfield Farm (both Trueman, 1981), Fenemere (C. Walker, 1988) and Ruewood Pastures.

In mires it is recorded in M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983), the Stiperstones and Stapeley Hill (both Trueman, 1981); MG10 *Carex dioica* on Hope Bowdler (P. Eades, 2010) and Titterstone Clee (A.K. Thorne, 1999); M13 *Palustriella commutata* on Caer Caradoc (R. Meade, 2010) and Hope Bowdler (Eades, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M22 *Juncus subnodulosus* at Sweeny Fen and elsewhere; M23 *Juncus effusus* in many places; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981) and Black Coppice Meadow; M27 *Filipendula ulmaria* at Lower Netchwood (Trueman, 1981) and Marl Allotment; and M35 *Montia fontana* on the Long Mynd (Tapper, 1983).

In upland grasslands, it is found in U1 *Rumex acetosella* at Attingham Park, Earl's Hill and Prees Heath; U4 *Agrostis capillaris* at Cwm Collo and Rhos Fiddle; in U5 *Nardus stricta* at Rhos Fiddle and Titterstone Clee (Thorne, 1999); and in U20 *Pteridium aquilinum* on Titterstone Clee (Thorne, 1999).

Its main woodland type is W10 *Quercus robur* at Bannister's Coppice, Nant-y-Myssels and elsewhere; but sometimes it is found in W8 *Fraxinus excelsior*, as at Wilderhope; W16 *Q. petraea* at Oaks Wood and Poles Coppice (both Trueman, 1981); W17 *Leucobryum glaucum* at Vron Wood; and W23 *Ulex europaeus* scrub at Old Oswestry.

It is not altitudinally restricted in the county, but as a perennial it is largely absent from arable areas, and it avoids waterlogged, peaty soils. A good place to see it is at Attingham Park, where it was first recorded by Perring in 1972.



### *Phalaris arundinacea* L.

#### Reed Canary-grass

Native. Widespread. Stable. Wetlands.

First record (as *Arundo colorata*): Williams, c. 1800, 'sides of ditches, brooks and in boggy grounds, common.'

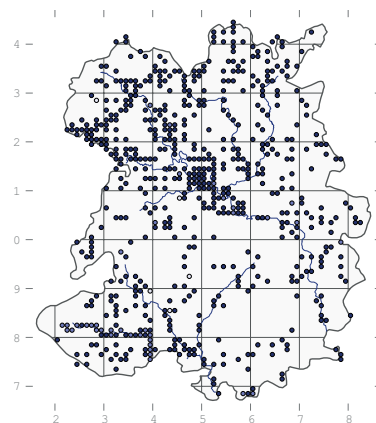
Most common along rivers, where it often occurs in the flood zone, sometimes forming large, dense stands. As a tall, perennial grass it is very competitive, but it does require fertile conditions and it is fairly intolerant of grazing or frequent cutting. It is most typical of S28 *P. arundinacea* grassland, which is common on the banks and in the floodplains of the major rivers and around pools and meres.

It is also a component of a wide variety of other communities, including dry motorway verges. It is recorded in MG1c *Filipendula ulmaria* by the Severn in Shrewsbury; MG10 *Holcus lanatus* at Ruewood Pastures; M27 *Filipendula ulmaria* at Berrington Pool and the Mere at Ellesmere; OV24 *Urtica dioica* on mudbanks in the Severn; OV26 *Epilobium hirsutum* on the banks of rivers throughout; OV30 *Bidens tripartita* at Marton Pool, Chirbury, Newton Mere and White Mere (these three by M.J. Wigginton); and OV32 *Ranunculus sceleratus* by the Roden at Tilley.

It is occasional in sedge swamps such as S3 *Carex paniculata* at Fenemere (C. Walker, 1988); S6 *Carex riparia* at Fenemere; S14 *Sparganium erectum* in the Severn at Buildwas; S22 *Glyceria fluitans* in the old Coalport Canal (both Trueman, 1981); S24 *Calamagrostis canescens* at Fenemere and Oss Mere; S26 *Phragmites australis* at Fenemere and Marton Pool (Wigginton, 1979); and S27 *Comarum palustre* at Berrington Pool (Wigginton, 1979).

It is also ubiquitous in W5 *Alnus glutinosa* and W6 *Salix × fragilis* woods around meres and along rivers

throughout. It is recorded up to about 400 m in quarries on Titterstone Clee (SO5976, D.H. Wrench, 2004). The variegated var. *picta* (Gardener's Garters) has been recorded at Merrington Green (J.H.S. Cox, 1991) and is commonly grown in gardens.



### *Phalaris aquatica* L.

#### Bulbous Canary-grass

Neophyte. Rare. Casual. Arable fields.

Just two records: in weedy field margins at Downton Hall (P.R. Green, 2009) and Woodhouse, Hopton Wafers (I.P. Green, 2009).

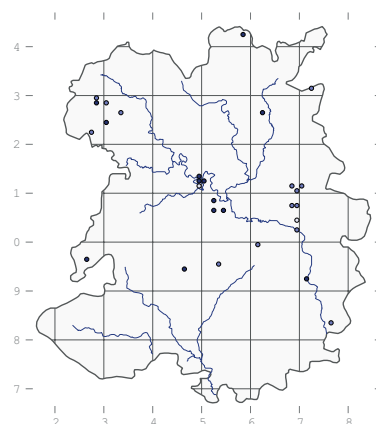
### *Phalaris canariensis* L.

#### Canary-grass

Neophyte. Scattered. Casual. Waste ground and gardens.

First record: H. Spare, 1841, Oakly Park

An annual of bird seed mixes and pheasant food, occasionally established for short periods in urban areas and woods. Most records are for waste ground, as on roadsides in Shrewsbury and by the Severn in Bridgnorth (R.M. Stokes, 1998). At Venus Pool it was established in a field sown with bird seed mix (Stokes, 2007). It is hardly ever recorded in the same place twice, which suggests that it is not hardy.



### *Phalaris minor* Retz.

#### Lesser Canary Grass

Neophyte. Rare. Casual. Waste ground.

Just two records: Edward Rutter collected a specimen (as *P. paradoxa*) in Cardeston Quarry in 1961 which was later identified as *P. minor* by A. Melderis (SHY). In 2009 S. O'Donnell also found it in a weedy organic arable field at Brynmawr.

### *Phalaris paradoxa* L.

#### Awed Canary-grass

Neophyte. Rare. Casual. Arable fields.

Recorded by D.L. Buckingham as a weed of winter wheat at Plas-yn-Grove in 1999 and 2000.

### *Agrostis capillaris* L.

#### Common Bent

Native. Widespread. Stable. Grassland, heathland and disturbed ground.

First record (as *A. vulgaris*): Williams, c. 1800, 'cornfields, common.'

Very common in grassland, heaths and woods throughout. In grassland it is recorded in CG2 *Avenula pubescens* at Pattens Rock Quarry, Llanymynech Hill (both Trueman, 1981) and Llyncllys Hill; CG3 *Bromopsis erecta* at Hilltop Meadow and Lea Quarry; CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981) and Minton Batch (R. Tapper, 1983); MG1 *Arrhenatherum elatius* swards on road verges and field margins throughout; MG4 *Sanguisorba officinalis* at Lord's Meadows (Trueman, 1981); MG5 *Festuca rubra* and MG6 *Cynosurus cristatus* throughout; MG7e *Plantago lanceolata* at Rudge (Trueman, 1981); MG8 *Caltha palustris* at Ruewood; MG9 *Deschampsia cespitosa* at Easthope Wood and Oss Mere; U1 *Rumex acetosella* at Prees Heath and on all the hills; U2 *Deschampsia flexuosa* at the Bog (Trueman, 1981); U4 *Agrostis capillaris* on all the hills; U5 *Nardus stricta* on the Stiperstones and Titterstone Clee (A.K. Thorne, 1999); and U20 *Pteridium aquilinum* on the Long Mynd (C.M. Owen, 1983) and Titterstone Clee (Thorne, 1999).

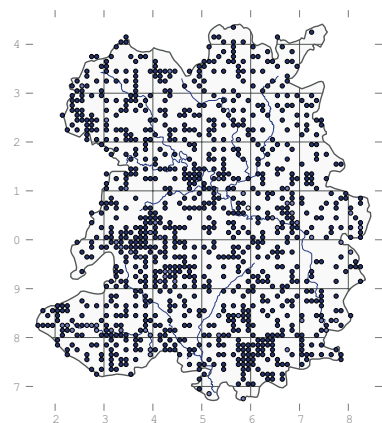
It is also frequent in a range of other habitats, including H8 *Ulex gallii* in Carding Mill Valley (Trueman, 1981) and on Prees Heath; H9 *Deschampsia flexuosa* on the Stiperstones; M22 *Juncus subnodulosus* at Porth-y-waen (Trueman, 1981) and Sweeny Fen; M23 *Juncus effusus* at Cramer Gutter and the Long Mynd (C.M. Owen, 1983);



M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); M27 *Filipendula ulmaria* at Lower Netchwood (Trueman, 1981) and Marl Allotment; M35 *Montia fontana* on Wild Moor (R. Tapper, 1983).

Being so common, it is well placed to exploit ruderal habitats and bare ground, and it is found in OV21 *Plantago major* in garden borders in Pant (Trueman, 1981); OV22 *Taraxacum officinale* in a sand quarry in Buildwas (Trueman, 1982); OV23 *Dactylis glomerata* on road verges everywhere; OV25 *Cirsium arvense* on field margins at Norton; OV27 *Chamerion angustifolium* on Prees Heath; OV37 *Festuca ovina* on spoil heaps at Snailbeach; and OV39 *Asplenium trichomanes* on Holloway Rocks (the last three by Trueman *et al.* 1981).

Finally, it is found in a few types of wood such as W8 *Fraxinus excelsior* in places like Stevenshill and Wynett Coppice, chiefly along rides and paths; W10 *Quercus robur* scrub at Muxton Bridge (Trueman, 1981); and W23 *Ulex europaeus* scrub and hedges at Old Oswestry and Mellin-y-Groque.



### *Agrostis gigantea* Roth

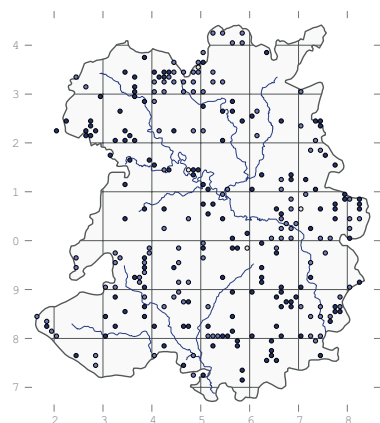
#### Black Bent

Native. Widespread. Stable. Arable fields, waste ground, river margins.

First record (as *A. canina*): Williams, c. 1800, 'cornfields, common' or (as *A. alba*): A. Ley, 1882, Whixall Moss, (det. J.B. Phipps, BIRM).

A perennial of arable fields, waste ground and wet places, favouring patches of bare ground but sometimes occurring in closed swards. It is found in MG1 *Arrhenatherum elatius* around the edges of Ropewalk Meadow; OV10 *Senecio vulgaris* in fields and waste ground at Newport (Trueman, 1981) and Eudon George; OV13 *Capsella bursa-pastoris* on road verges at Priorslee (Trueman, 1981); OV32 *Ranunculus sceleratus*

on bare mud by the side of the Roden at Tilley; W6 *Salix* × *fragilis* near the margins of White Mere; and W24 *Rubus fruticosus* on waste ground in Ironbridge (Trueman, 1981). A good place to see it in recent years has been in field margins by Berrington Pool. It is mostly lowland, but above 400 m at Nantypyllau (SO1883, F.H. Perring, 1977).

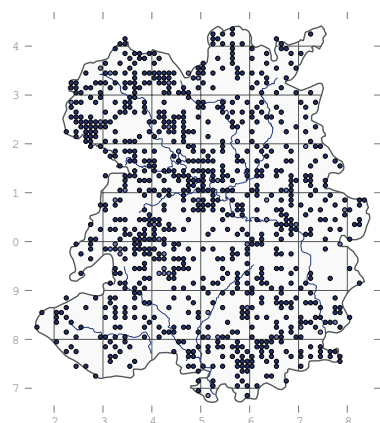


### *Agrostis stolonifera* L.

#### Creeping Bent

Native. Widespread. Stable. Grassland, ponds, ditches, river banks, wet woods and upland flushes.

First record: Williams, 1800, 'meadows and moist ditch-banks.'



In wet or seasonally inundated habitats. It has been found growing submerged in A2 *Lemna minor* pools at Brown Moss, where the water levels fluctuate drastically. It is also frequent in a wide variety of grasslands including CG2 *Avenula pubescens* in an old quarry at Craig Sychtyn; CG3 *Bromopsis erecta* at Hilltop Meadow (D.H. Wrench, 1994); MG5 *Festuca rubra* in places such as Llynclys Hill, Stocking Meadows (Trueman, 1981) and Stretton Westwood (Wrench, 1995); MG8 *Caltha palustris* at Crose Mere, Melverley Farm, Morton Pool and Ruewood; MG9 *Deschampsia cespitosa* at Hill Houses; MG10 *Holcus lanatus* everywhere; and MG13 *Alopecurus*

*geniculatus* at Brown Moss, Fenemere and Ruewood (Trueman, 1981).

It is often replaced by *A. canina* on the more acid mires, but in places they grow together, for example in M4 *Carex rostrata* around Snipe Bog; and in the uplands it is found in base-rich flushes such as M6 *Carex echinata* on the Stiperstones and Stapeley Hill (both Trueman, 1981); M10 *C. dioica* at Trefonen Marshes; M15 *Trichophorum germanicum* at Cramer Gutter; in most stands of M22 *Juncus subnodulosus* and M23 *Juncus effusus*; M24 *Cirsium dissectum* at Black Coppice; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); M27 *Filipendula ulmaria* at Berrington Pool and the Mere at Ellesmere; and M35 *Montia fontana* at Boiling Well (Trueman, 1981) and Wild Moor (R. Tapper, 1983).

There are many ruderal open vegetation communities in which it grows. Trueman (1981) recorded it in OV10 *Senecio vulgaris* on an arable field margin at Welshampton; OV18 *Polygonum aviculare* on a field margin at Edmond; and OV19 *Tripleurospermum inodorum* community on a road verge at Tong. In Withybed Wood it occurs in OV28 *A. stolonifera* vegetation along a woodland ride (J. Bingham, 1986). On the margins of eutrophic pools, usually on bare mud, it is found in OV30 *Bidens tripartita* around meres such as Marton Pool, Chirbury, and White Mere (both M.J. Wigginton, 1979); OV31 *Rorippa palustris* at Brown Moss; OV32 *Ranunculus sceleratus* at Crose Mere, White Mere and by the Roden at Tilley; and OV35 *Lythrum portula* at Brown Moss and Llyn Rhuddwyn (Trueman, 1981).

It is present in most swamp communities, sometimes in abundance, and there are records of it in S3 *Carex paniculata* at Sweat Mere (B.D. Wheeler, 1986); S4 *Phragmites australis* at Oss Mere (Wigginton, 1979); S6 *Carex riparia* at Blake Mere (Wigginton, 1979) and Wildmoor Pool (Trueman, 1981); S14 *Sparganium erectum* at Old Oswestry, by the Severn at Buildwas (Trueman, 1981), and elsewhere; S22 *Glyceria fluitans* in the Coalport Canal (Trueman, 1981); S26 *Phragmites australis* in the Shrewsbury Canal at Wappenshall; and S27 *Comarum palustre* at Berrington, Bomere, Shomere pools (all Wigginton, 1979), Brown Moss (Trueman, 1983) and the Mere at Ellesmere.

Finally, it is found in several types of woodland, including all W1 *Salix*



*cinerea* woods; W4 *Betula pubescens* at Calcott Moss and Shomere; and in all W5 *Alnus glutinosa* and W6 *Salix × fragilis* woods.

[*Agrostis curtisii* Kerguelen, Bristle Bent

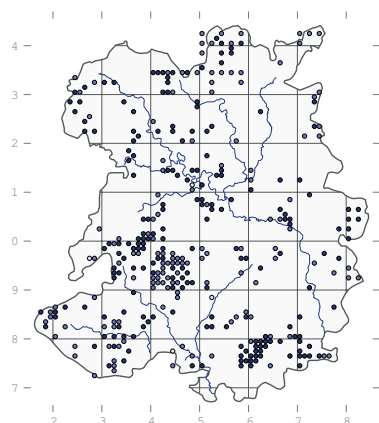
Lloyd & Rutter (1957) list 'one old record, from Pulverbatch' but it seems unlikely.]

### ***Agrostis canina* L.**

#### **Velvet Bent**

Native. Local. Stable. Axiophyte: swamps and mires.

First record: W. Phillips, 1889, 'meadow near Wetmoor, Middlehope' (SHY).



In a variety of wetland habitats throughout the county, usually in rather acid conditions. It occurs in several types of damp grassland such as MG9 *Deschampsia cespitosa* at Cole Mere; MG10 *Holcus lanatus* at Ruewood; and MG13 *Alopecurus geniculatus* at Brown Moss (Trueman, 1983).

It is not uncommon in flushes and mires, and it is recorded on M2 *Sphagnum fallax* at Snipe Bog; M6 *Carex echinata* at Upper Darnford (R. Tapper, 1983) and the Stiperstones (Trueman, 1981); M15 *Trichophorum germanicum* at Cramer Gutter; M22c *Carex elata* at Crose Mere; M23 *J. effusus* on the Long Mynd (C.M. Owen, 1983), Rhos Fiddle and many other places; M24 *Cirsium dissectum* at Cole Mere and Black Coppice; and M25 *Molinia caerulea* at Black Coppice and Steel Heath.

Sometimes it grows on the edges of pools, as in OV35 *Lythrum portula* at Brown Moss; S11 *Carex vesicaria* at the Long Bog; and S12d *Typha latifolia* at Shelve Pool (Trueman, 1981). Although it is more common in open conditions, it also occurs in light shade in W1 *Salix cinerea* at Snipe Bog; W4 *Betula pubescens* in places

such as Bomere Pool, Lin Can Moss and Haughmond Hill; and W5 *Alnus glutinosa* at Sweat Mere and Shomere. It has no altitudinal restriction in the county, being recorded high on Titterstone Cleef and the Stiperstones. It has probably been rather over-recorded for *A. vinealis*, as the latter was treated as a subspecies until the 1980s.

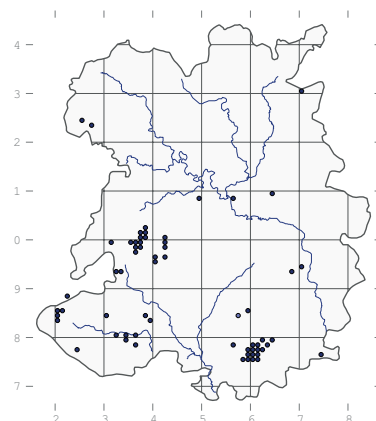
### ***Agrostis vinealis* Schreber**

#### **Brown Bent**

Native. Local. Stable. Heathland, grassland, mires.

First record: M.B. Fuller, 1974, 'Nurdy Bank and Cleef Liberty'.

A reasonably widespread plant of upland heaths and pastures, but not clearly separated from *A. canina* until recently. In general *vinealis* is the upland species and *canina* occurs in lowland mires, but this rule cannot be relied upon for identification purposes. Although records are sparse, it is recorded in H12 *Vaccinium myrtillus* at Rhos Fiddle; M15 *Trichophorum germanicum* and M23 *Juncus effusus* at Cramer Gutter; U4 *Agrostis capillaris* at Rhos Fiddle and U5 *Nardus stricta* at Rhos Fiddle, the Stiperstones and Titterstone Cleef. In the north of the county it is recorded at Viroconium, on the Ercall, on Llyncllys Hill, and near Cheswardine (Perring, 1997).



### ***Calamagrostis epigejos* (L.)**

#### **Roth**

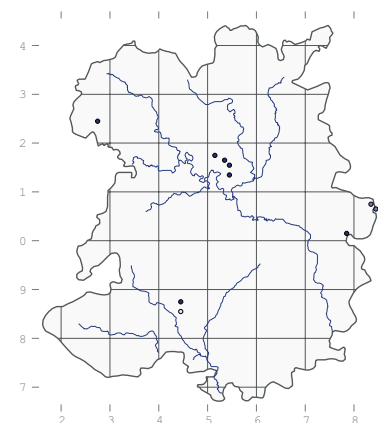
#### **Wood Small-reed**

Native. Scarce. Increasing. Woodland edges, paths.

First record: E. Elsmere, c. 1841, Battlefield Church.

An uncommon grass, on the western edge of its range in Shropshire. Since the early 19<sup>th</sup> century it has grown in the vicinity of Battlefield Church, where Edward Williams seems to have misidentified it as *C. canescens*. It still occurs along the path in the

nearby Haughmond Abbey Wood and on a field edge at Colin's Rough. In both places it grows on disturbed ground, in what could be described as MG1 *Arrhenatherum elatius* grassland. It used to grow along rides on Haughmond Hill (P. Parker, 1987) but it has not been seen there since 1993. There are several other places in the county where it has been found, but it does not seem to persist: in two places near Boscobel in the 1970s (B.R. Fowler), at Marshbrook from 1977 and 1997 (H. Hand), at Marton Pool, Chirbury (R.D. Benson, 1899), possibly at Strefford (G.H. Griffiths, c. 1870), Snowdon Pool (M. Cousins, 2002) and Dolgoch Quarry (A.K. Thorne, 2006). It seems to behave as a casual, but there are more sites for it now than at any time in the past, and it may well be increasing. The best place to see it is between New Coppice and Colin's Rough, north of Haughmond Abbey.



### ***Calamagrostis canescens***

(Wigg.) Roth

#### **Purple Small-reed**

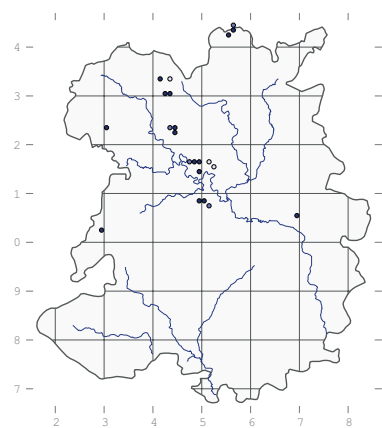
Native. Local. Stable. Axiophyte: wet woodland and fen.

First record (as *Arundo calamagrostis*): Williams, c. 1800, Hencott Pool, Marton Pool and 'ditch-banks about Sundorn and Battlefield'.

In woodland and fen around some of the meres and other wetlands. It is characteristic of S24 *C. canescens* fen, which is the most species-rich of the *Phragmites* reedbeds, and is recorded at Fenemere and Oss Mere (M.J. Wigginton, 1979), but it also grows in a distinctive type of grassland, where it is the dominant species, in places like the Old River Bed in Shrewsbury.

Elsewhere, it is found in S3 *Carex paniculata* at Fenemere (C. Walker, 1988) and Sweat Mere (B.D. Wheeler, 1986); S6 *Carex riparia* at Fenemere; S14 *Sparganium erectum* at Betton Pool (Wigginton, 1979); S26 *Phragmites australis* at Fenemere and Marton

Pool, Chirbury; W5 *Alnus glutinosa* in places like Blake Mere, Crose Mere (Wigginton, 1979), Fenemere, Morton Pool (D.H. Wrench, 1991) and Sweat Mere; W6 *Salix* × *fragilis* in partially drained sites such as Fenemere, Hencott Pool and Marton Pool, Chirbury. In Telford it grows in wet woodland by the A4169 at Aqueduct (G. Castle, 1998). Although it is on the edge of its range in Shropshire, there is no real evidence of any change in its distribution and it is abundant in some sites. In the light of subsequent records, it seems likely that Williams's records for Sundorn and Battlefield were errors for *C. epigejos*.



### *Gastridium ventricosum* (Gouan) Schinz & Thell.

#### Nit-grass

A casual, probably from poultry food, at Harper Adams Agricultural College in 1927 (D.H. Robinson, *Record of Bare Facts* 37, 1928).

[*Lagurus ovatus* L., Hare's-tail

A specimen in R.D. Benson's herbarium at SHYB, dated 1893, was probably collected in a garden in Shrewsbury.]

### *Apera spica-venti* (L.) P. Beauv.

#### Loose Silky-bent

Archaeophyte. Rare. Casual. Waste ground and roadsides.

First record: J.C. Melvill, 1910, 'Buildwas, in waste ground, very infrequent.'

There is only one recent record, a patch on a roadside at Knockin Heath (SJ368210, C.A. Stace, 2006, BIRM). Sinker (1985) mentions a few plants on a roadside near Gobowen in 1981 (B. Davies). A much earlier record (as *Agrostis spica-venti*) by H. Spare at Oakly Park (in Leighton, 1841) should perhaps be considered unconfirmed.

### *Apera interrupta* (L.) P. Beauv. Dense Silky-bent

Archaeophyte. Rare.

By a track on the Weald Moors in 1999 (SJ680173, M. Lawley, det. Stace, BIRM).

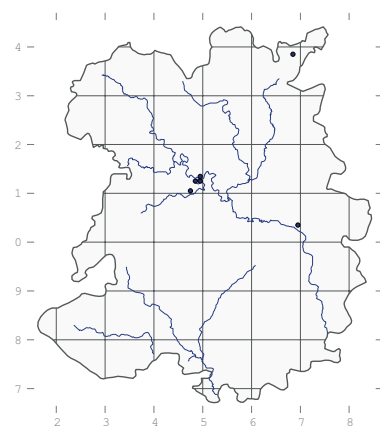
### *Polypogon viridis* (Gouan) Breistr.

#### Water Bent

Neophyte. Rare. Increasing. Waste ground.

First record: Whild, 2004, 'In cracks in the pavement in Benyon St., Castlefields, SJ498131.'

A casual of waste ground, well naturalised along roadsides in the Castlefields area of Shrewsbury, possibly having arrived via the station. In recent years it has spread to the towpath by the Severn; to a Highways Department yard at Nobold (D.H. Wrench, 2007); an arable field edge at Cobscot (2009) and to Blists Hill (J.O. Mountford, 2013).



### *Alopecurus pratensis* L. Meadow Foxtail

Native. Widespread. Stable. Grassland.

First record: Williams, c. 1800, 'meadows, common.'

A perennial of mesotrophic, often fertile damp soils in river floodplains, on badly-drained roadside verges and in damp hollows in fields. It was once sown as an agricultural grass, but is apparently not often used now. Nevertheless, it is sometimes frequent in recently sown leys in low-lying areas. It is recorded in MG1 *Arrhenatherum elatius* grassland on roadsides and in rank corners of meadows everywhere, in all stands of MG4 *Sanguisorba officinalis*, in MG8 *Caltha palustris* flood meadows such as those at Lord's Meadow, Melverley Farm and Ruewood, and it is frequent in MG5 *Festuca rubra*

grassland in places like Callow Lane (D.H. Wrench, 1995), Derrington (A. Hillman, 1992) and Hill Houses (Wrench, 1994). Sometimes it is frequent in MG6 *Cynosurus cristatus*, as at Melverley Farm and Ruewood. In mire communities it is found in M23 *Juncus effusus* at Ruewood and M27 *Filipendula ulmaria* at Berrington Pool. By rivers it is typical of OV26 *Epilobium hirsutum* tall-herb, as at Longford. It is primarily a lowland plant, being absent from the upper reaches of the Stiperstones and Titterstone Cleve.



### *Alopecurus geniculatus* L. Marsh Foxtail

Native. Widespread. Stable. Marshy grassland and the sides of pools and rivers.

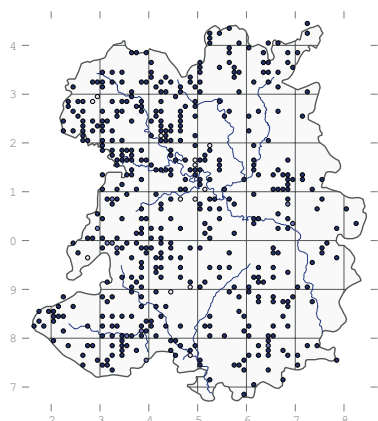
First record: Williams, c. 1800, 'by sides of pools, common.'

In wet mesotrophic grassland, most typically in MG13 *A. geniculatus* in wet hollows and the margins of pools in many places including Brown Moss (Trueman, 1983), Fenemere and Ruewood (Trueman, 1980).

It is also recorded in MG6 *Anthoxanthum odoratum* at Melverley Farm; MG8 *Caltha palustris* at Melverley Farm and Morton Pool; MG10 *Holcus lanatus* at Brown Moss, Fenemere and Ruewood; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); M23 *Juncus effusus* at Fenemere; M35 *Montia fontana* at Boiling Well (Trueman, 1980); OV13 *Capsella bursa-pastoris* in fields at Upton Cressett; OV31 *Rorippa palustris* around shallow pools at Brown Moss; S12 *Typha latifolia* at Brown Moss; S26 *Phragmites australis* in a ditch along the side of Yell Meadow at Cole Mere; and W5 *Alnus glutinosa* in Haughmond Abbey Wood.

It is not restricted by altitude, occurring near the summits of the Stiperstones and Titterstone Cleve. It is

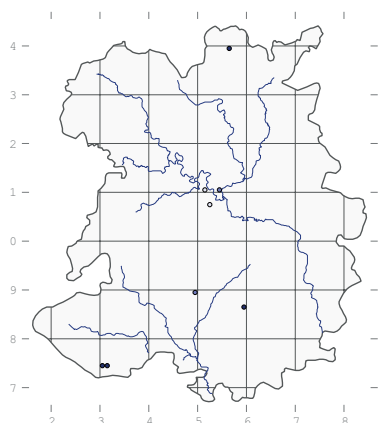
occasional along several rivers, where it is typical of muddy margins, especially in cattle-poached areas. Good places to look for it include ponds at Attingham Park (first recorded by Perring in 1972) and Battlefield. Williams (c. 1800) recognised a var. *bulbosus* with copious long fibres on the roots, which he described as growing on sandy roads.



***Alopecurus aequalis* Sobol.**  
**Orange Foxtail**

Native. Rare. Stable. Axiophyte: mesotrophic pools.

First record: Beckwith, 1877, Berrington Pool (SHY).



An annual, restricted to the margins of pools with fluctuating water levels. Early records are for the meres, but it is also found on the hills.

Apart from Beckwith's record for Berrington, other meres where it has been recorded include Mere Pool (A. Ley, between 1882 and 1887), the old kettlehole at Attingham Park (Perring, 1972) and Brown Moss, where it was first recorded by Sinkler in 1961. It has been lost from all except the last, where it is still abundant in some years around pools 1, 3, 4 & 5. It is typical of OV35 *Lythrum portula* community and OV31 *Rorippa palustris*.

There are recent records of it in ponds near the summit of Brown Clee at SO594866, c. 540 m (J.H.S. Cox, 1991)

and SO596967, 507 m (Whild & Trueman, 2011) and in two temporary pools on Stow Hill at 415 m (J. Clayfield, 2008).

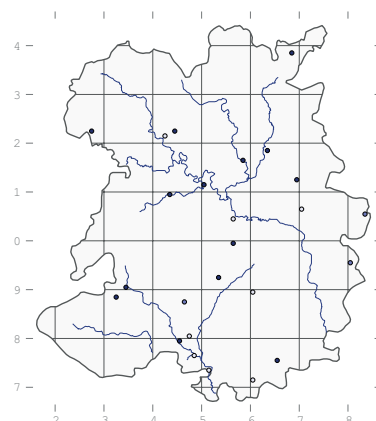
***Alopecurus myosuroides***  
**Huds.**

**Black-grass**

Archaeophyte. Scattered. Increasing. Roadsides, arable fields and gardens.

First record (as *A. agrestis*): Williams, 1797, 'cornfields between Culmington and Onybury.'

An annual which can become a pest of arable crops, but it is on the edge of its range in Shropshire and it is rarely more than a casual. The majority of records are for small numbers of plants on roadside verges. It is found in places like the verge of the A483 at Pant (T.F. Preece, 2008) and the A49 at Onibury (P.R. Green, 2010). Sometimes it becomes established in arable fields, and it was abundant at Bransley in 2009 (Green) and Lydham in 2010 (A.K. Thorne), but it does not seem to persist. A few records are for gardens, as in a strawberry patch at Alcaston in 1977 (H. Hand) and a flower bed in Hanwood in 2005 (D.H. Wrench).



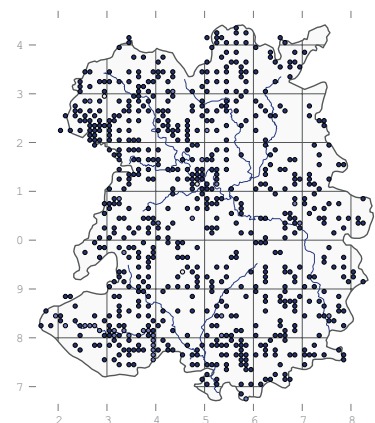
***Phleum pratense* L.**  
**Timothy**

Native. Widespread. Stable. Grassland.

First record: Williams, c. 1800, 'meadows and pastures, common.'

In a variety of grassland and wetlands, including MG1e *Centaurea nigra* at Ropewalk Meadow; MG5 *Festuca rubra* at Guilden Down, Morton Pool (A. Hillman, 1993) and Tana Leas Farm (D.H. Wrench, 1995); MG8 *Caltha palustris* at Crose Mere; MG9 *Deschampsia cespitosa* at Hill Houses; MG10 *Holcus lanatus* and MG13 *Alopecurus geniculatus* at Fenemere; M22 *Juncus subnodulosus* at Morton Pool (Wrench, 1991), Sweeny Fen and Trefonen Marshes (Trueman, 1981);

and M23 *Juncus effusus* at Ruewood Pastures (P. Welsh, 1981).

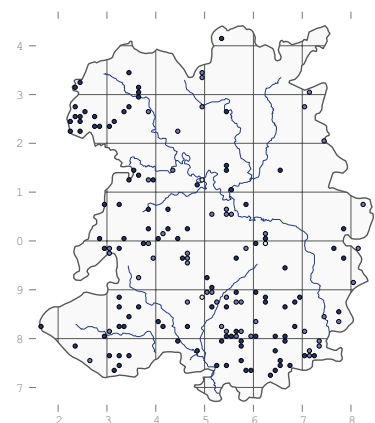


***Phleum bertolonii* DC.**  
**Smaller Cat's-tail**

Native. Local. Stable. Grassland.

First record (as *P. pratense* var. *nodosum*): Leighton, 1841, 'common.'

Occasional in grasslands, including CG2 *Avenula pubescens* on Windmill Hill; MG5 *Festuca rubra* at the Foxholes; and M22 *Juncus subnodulosus* at Morton Pool (D.H. Wrench, 1991) and Sweeny Fen (A. Hillman, 1992). It is often rather scarce, and it is unevenly recorded. A good place to look for it is along Blakeway Hollow.



*Poa angustifolia* at Wenlock Cemetery



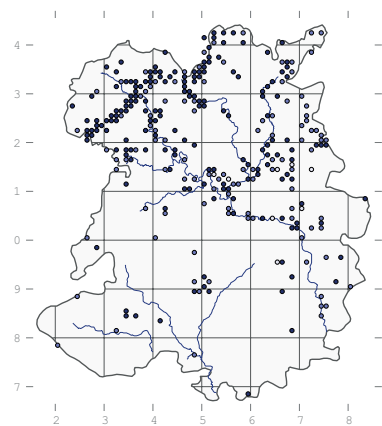
## *Glyceria maxima* (Hartman) O. Holmb.

### Reed Sweet-grass

Native. Local. Stable. Rivers, lakes, canals, swamps.

First records (as *Poa aquatica*): Williams, c. 1800, 'in a pool by the side of the road between Muckley Cross and Morville; canal at Uffington; on banks of the Roden and Tern; in the pool at Lilleshall House.'

Typical of base-rich still or slow-flowing water in the lowlands, often in places where there is a peaty substrate. It forms extensive stands which can be very species-poor, especially when it grows as floating mats on shallow water. Its main habitat is in S5 *Glyceria maxima* swamps on the margins of rivers such as the Severn, Roden and Tern. When damp fields in the floodplain are left unmanaged for a year or two it can rapidly colonise the whole area.



## *Glyceria fluitans* (L.) R.Br.

### Floating Sweet-grass

Native. Widespread. Stable. Pools, ditches, canals, rivers and marshy grassland.

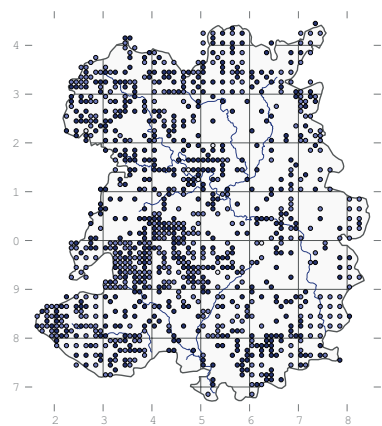
First record (as *Poa fluitans*): Williams, c. 1800, 'ditches, common.'

Common in a wide variety of wetlands. It is recorded in MG5 *Festuca rubra* grassland at Ruewood (S.A. Ellis, 1987); MG8 *Caltha palustris* at Morton Pool; MG10 *Holcus lanatus* at Brown Moss, Larkfield Farm (Trueman, 1981), Ruewood and Fenemere; MG13 *Alopecurus geniculatus* at Brown Moss (Trueman, 1983) and Fenemere; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979) and Morton Pool (D.H. Wrench, 1991); M23 *J. effusus* at Upper Darnford (R. Tapper, 1983) and Sweat Mere; and M35 *Montia fontana* on the Long Mynd (Tapper, 1983).

In open vegetation it is found in OV26 *Epilobium hirsutum* on the edge of a ditch at Longford; OV30 *Bidens tripartita* on the margin of White

Mere (Wigginton, 1979); and OV31 *Rorippa palustris* at Brown Moss. It is also common in swamps such as S9 *Carex rostrata* in Wildmoor Pool (Tapper, 1983); S14 *Sparganium erectum* in pools on Old Oswestry; S22 *Glyceria fluitans* in the Coalport Canal (Trueman, 1981); S26 *Phragmites australis* in a ditch at Cole Mere.

It is also found in some woodland types such as W1 *Salix cinerea* at Shomere; W4 *Betula pubescens* on Haughmond Hill; W5 *Alnus glutinosa* at Sweat Mere; W6 *Salix* × *fragilis* at Holly Coppice; and W10 *Quercus robur* in Bannister's Coppice.

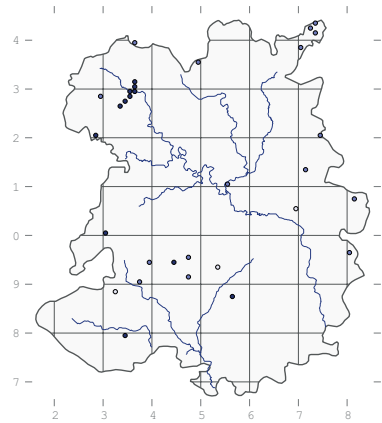


## *Glyceria* × *pedicellata* F.Towns (*fluitans* × *notata*) Hybrid Sweet-grass

Native. Scattered. Stable. Pools, ditches, streams and marshy grassland.

First record: W.H. Painter, 1894, Madeley Court (BIRM, MANCH).

Occasional in wetlands. There are recent records for various parts of the Montgomery Canal, Llanhowell (D.H. Wrench, 1995), a pasture at Abdon (Trueman, 1998) and Meadowtown.

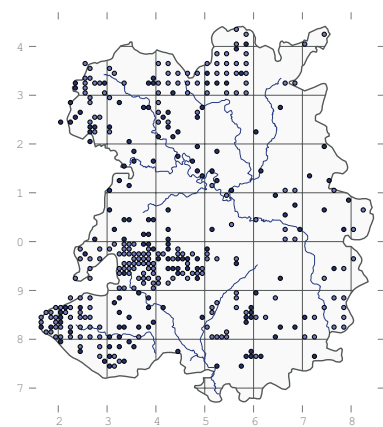


## *Glyceria declinata* Breb. Small Sweet-grass

Native. Local. Stable. Pools, ditches, streams and marshy grassland.

First record: C.M. & J.G. Dony, 1956, 'slopes of Clee Hill' (LTN).

In shallow water in a variety of wetland types, including MG8 *Caltha palustris* at Morton Pool; M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979) and Morton Pool (Trueman, 1981); M23 *Juncus effusus* at Fenemere; and M35 *Montia fontana* at Boiling Well (Trueman, 1980). It is more common in the uplands, being recorded as high as 507 m in a pool at the summit of Brown Clee (SO59668667, 2011).

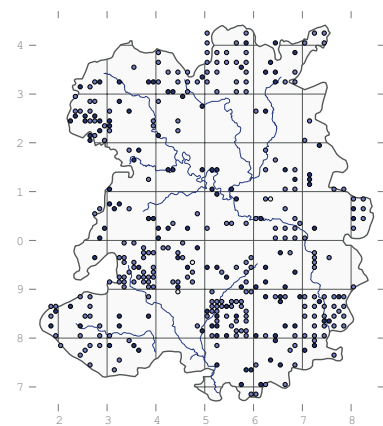


## *Glyceria notata* Chevall. Plicate Sweet-grass

Native. Widespread. Stable. Pools, ditches, streams and marshy grassland.

First record: R.D. Benson, <1904, Pulverbatch Dingle (SHYB).

Occasional in wet pasture and ditches, in MG8 *Caltha palustris* at Meverley Farm; MG10 *Holcus lanatus* in a pond at Larkfield Farm (Trueman, 1981) and Ruewood Pastures; MG13 *Alopecurus geniculatus* at Ruewood (Trueman, 1980); M22 *Juncus subnodulosus* at Crose Mere (M.J. Wigginton, 1979); OV30 *Bidens tripartita* on the edge of Marton Pool, Chirbury (Wigginton, 1979); and W5b *Alnus glutinosa* at Crose Mere.

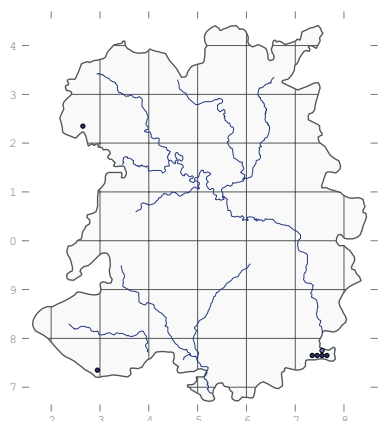


***Melica nutans* L.****Mountain Melick**

Native. Scarce. Stable. Axiophyte: woods.

First records: E. Lees and A. Bloxam, in Leighton (1841), Wyre Forest.

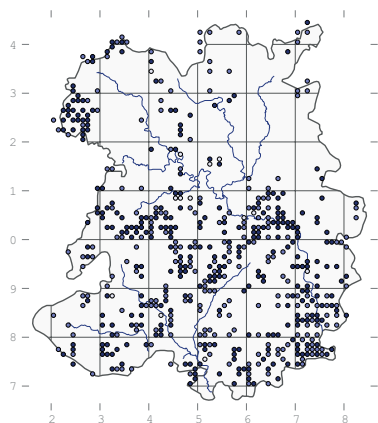
In various places in the Wyre Forest, at Blodwel Rock (SJ268233, J. Pedlow, 1996, det. M. Wainwright) and Lurkenhope Wood (SO2973, J. Clayfield, 2012, conf. Whild).

***Melica uniflora* Retz.****Wood Melick**

Native. Local. Stable. Axiophyte: woods and hedgebanks.

First record: Williams, c. 1800, 'woods and shady lanes.'

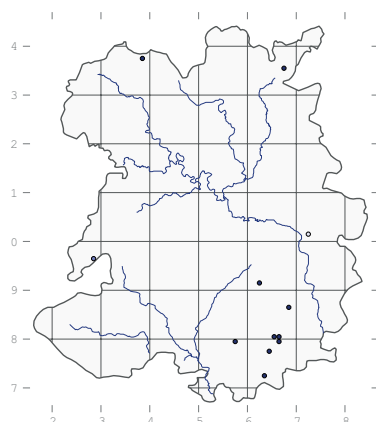
In ancient woods and ancient hedgerows, often on roadside banks and steep slopes where it benefits from the half shade and free-draining soils. It is large confined to W8 *Fraxinus excelsior* woods such as those at Craig Sychtyn, Llyncllys Hill and along the Borle Brook at New England, but it has also been recorded in W10 *Quercus robur* at Haughmond Abbey. A good place to see it is at Benthall Edge, where it was first recorded by G. Lloyd in c. 1841, and it is still abundant. Lowland: up to about 289 m at Resting Hill (SJ372018, 1995).

***Bromus commutatus*****Schrader****Meadow Brome**

Native. Scattered. Increasing. Arable fields and waste ground.

First record: W.H. Painter, 1894, Sutton Maddock.

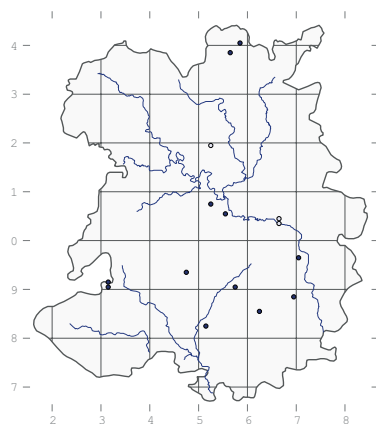
Occasional as a crop contaminant in arable fields or as a casual on roadsides. It was abundant in a huge field of silage at Plas-yn-Grove in 2009 (BIRM), in a corn field at Detton (P.R. Green, 2010) and in a field margin west of Prescott Mill in 2010.

***Bromus racemosus* L.****Smooth Brome**

Native. Scattered. Increasing. Axiophyte: arable fields, meadows, roadsides.

First record: E. Elsmere (conf. Leighton), 1841, Hadnall.

Occasional in arable fields and grasslands. There are recent records of it in a field margin near Berrington Pool, in a created hay meadow at Venus Pool, on Hope Bowdler Hill, on a roadside verge at Prees Heath, in a species-rich meadow at Stanton Long, and on field margins at Eudon George and Little Sutton.

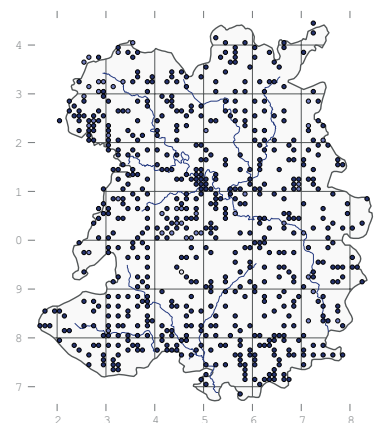
***Bromus hordeaceus* L.****Soft-brome**

Native. Widespread. Stable. Grassland.

First record (as *Bromus mollis*): Williams, c. 1800, 'meadows, common.'

Common in fields of pasture, hay and silage and on the margins of other types of grassland. As an annual, it flourishes in places where there has been cattle poaching or other soil disturbance. Its most characteristic habitat is MG6 *Cynosurus cristatus*, where it is nearly always present and sometimes abundant in sown fields of silage. It is also sometimes recorded in MG5 *Festuca rubra* meadows, as at Derrington (A. Hillman, 1992), Hill Houses (D.H. Wrench, 1994), Seifton Batch and Wettles (both Wrench, 1995). It is also often found on MG1 *Arrhenatherum elatius* roadsides, especially around gateways, as in the car park at Blakeway Hollow. At Melverley Farm it occurs in MG8 *Caltha palustris* grassland. It has been recorded in U1 *Rumex acetosella* grassland at Abbot's Castle Hill (Trueman, 2005) and on Titterstone Clee (A.K. Thorne, 1999) and in CG3 *Bromopsis erecta* at Lea Quarry. At Sweeny Fen it grows in the M22 *Juncus subnodulosus* fen-meadow, and at Nant-y-myssels it occurs in open, grazed W10 *Quercus robur* woodland. It is restricted by habitat more than by altitude, as diminutive forms grow on the hills up to about 460 m on Titterstone Clee.

The subspecies *hordeaceus* is widespread in the county, while ssp. *longipedicellatus* Spalton has been recorded at Bridgnorth (W. Tait, 1961, det. L.M. Spalton, E) and in fields above Cramer Gutter (Whild, 2000, det. Spalton, BIRM). *Bromus hordeaceus* ssp. *pseudothominei* (P.M. Sm.) H. Scholz (*B. × pseudothominei* P.M. Sm.), Lesser Soft-brome, has been recorded at Hodnet (Perring, 1977) and Belle Vue (J. Martin, 1989).



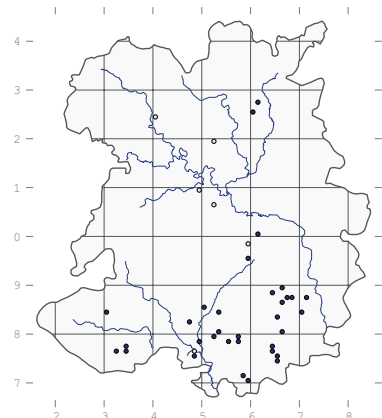
## *Bromus secalinus* L.

### Rye Brome

Archaeophyte. Local. Increasing.  
Arable field margins.

First record: Williams, 1797, 'Cornfield near Berrington.'

A weed of cornfields, introduced as a seed contaminant. There were several records in the 19<sup>th</sup> century and in 1904 A. Ley recorded it on Wenlock Edge; but then it was not seen in the county again until 2007, when J. Clayfield found it in a field near Hopton Titterhill (SO3477, conf. C.A. Stace, BIRM). Since then it has proven to be frequent on field margins, and it may be more widespread than the map shows. It is usually found on field margins or around gateways rather than mixed in with the crop; this suggests that it is not so much a contaminant of imported seed as an opportunistic colonizer of bare ground.



## *Anisantha diandra* (Roth)

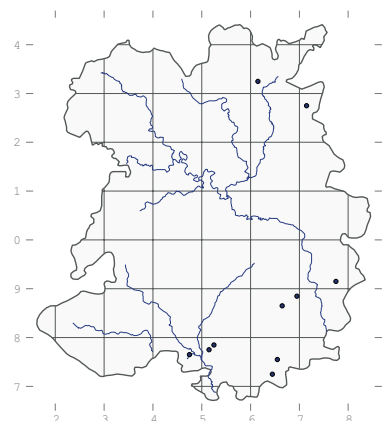
Tutin ex Tzvelev

### Great Brome

Neophyte. Scattered. Increasing. Arable fields and hedges.

First record: I.P. Green, 2009, Overton.

Occasional in hedges and as a weed in fields of oats, wheat and maize in the south of the county.



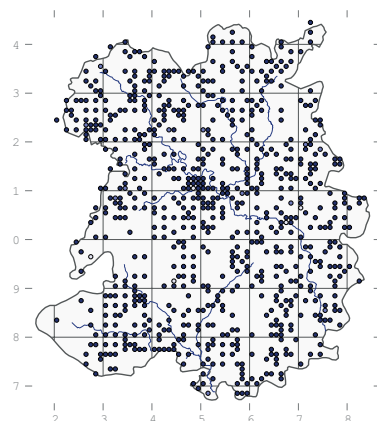
## *Anisantha sterilis* (L.) Nevski

### Barren Brome

Archaeophyte. Widespread. Stable.  
Field margins, hedges, track sides, gardens.

First record (as *Bromus sterilis*): Williams, c. 1800, 'ditch banks in a sandy soil and old walls, common.'

A common weed of disturbed soils at the base of hedges and on the edges of fields. It is ubiquitous in MG1 *Arrhenatherum elatius* grassland throughout the county, and sometimes it crops up in MG5 *Festuca rubra*, as at Seifton Batch (D.H. Wrench, 1995) and in the margins of other grasslands. It occurs around the edges or in gateways of just about every arable field in the county, and has been recorded in OV15 *Anagallis arvensis* at Fillett's Farm. At Nant-y-myssels it grows in open W10 *Quercus robur* and at Nobold it is recorded in W24 *Rubus fruticosus* in a hedge. It is a lowland plant, but it has been recorded as high as 362 m on Churchtown Hill (SO2587, 1997).



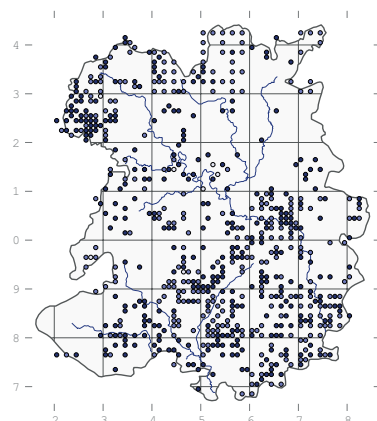
## *Bromopsis ramosa* (Hudson)

Holub.

### Hairy Brome

Native. Local. Stable. Axiophyte: woods and hedges.

First record (as *Bromus asper*): Williams, c. 1800, 'woods and hedges.'



Frequent on the margins of W8 *Fraxinus excelsior* woods in places like Hampton Beech (Trueman, 1981), Sodylt Wood and Brownheath Moss; and in CG2 *Avenula pubescens* in Dolgoch Quarry; MG1c *Filipendula ulmaria* at the Speller; W24 *Rubus fruticosus* hedges at Lower Wallop.

## *Bromopsis benekenii* (Lange)

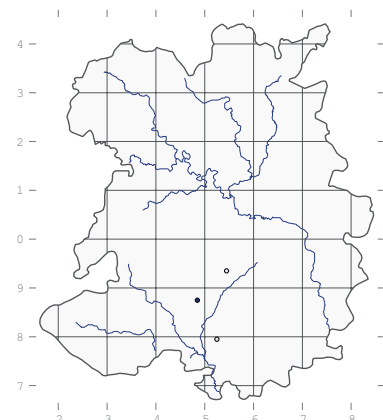
Holub

### Lesser Hairy-brome

Native. Rare. Stable. Axiophyte: woods.

First record (as *Bromus asper* var. *benekenii*): A. Ley & W.M. Rogers, 1909, Wenlock Edge, near Longville (c. SO5493, *Record of Bare Facts* 19, 1910, BIRM).

The only current site is at Harton Hollow, where it was tentatively recorded by Sinker in 1963, and was still present in 2001 (SO482878, conf. C.A. Stace, BIRM & LTR) in W8 *Fraxinus excelsior* woodland. There were about 50 plants alongside the track from the car park. A dot for SJ51 in Perring & Walters's Atlas (1962) has not been traced, and the dot for SO47, mentioned by Sinker (1985), was for Downton Gorge in Herefordshire.



## *Bromopsis erecta* (Huds.)

Fourr.

### Upright Brome

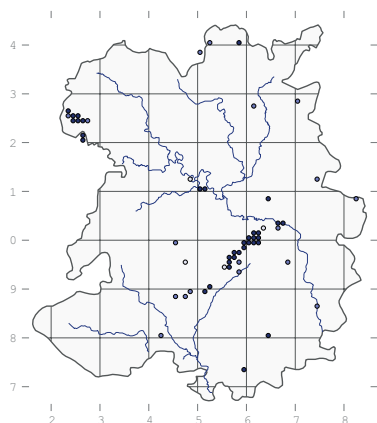
Native. Local. Stable. Axiophyte: meadows and limestone quarries.

First record: Williams, c. 1800, 'on the bank of the Severn by the Austin Friars, below the Welsh bridge, Shrewsbury.'

Usually in species-rich calcareous grassland such as CG2 *Avenula pubescens* in Ballstone Quarry, Jones's Rough and Windmill Hill; CG3 *Bromopsis erecta* at Ballstone Quarry, on the rock outcrops at Ippikin's Rock, in Lea and Lilleshall quarries, on Moelydd, at Stokes's Barn and the Foxholes; in CG7 *Thymus polytrichus* on limestone exposures at Presthope; MG1c *Filipendula ulmaria* on a hedgebank at the Speller; and in MG5



*Festuca rubra* at Stretton Westwood and Treflach. It can come to dominate under-managed grassland, as at Hilltop Meadow where MG5b *Galium verum* grassland has largely succeeded to CG3 *Bromopsis erecta* in recent years. Lowland: up to about 260 m on Wenlock Edge.



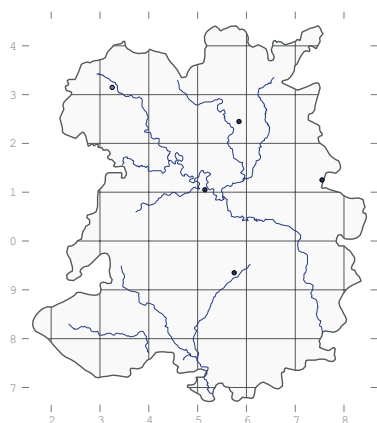
***Ceratochloa carinata*** (Hook. & Arn.) Tutin

**California Brome**

Neophyte. Scarce. Increasing. Roadsides and arable fields.

First record: B. Davies, 1979, Whittington.

An uncommon perennial grass which occasionally turns up on roadsides, as at Whittington in 1979. It has recently been recorded by the old Severn Valley Railway at Sutton, Shrewsbury (Whild, 2003, conf. Stace, LTR), on roadsides at Hine Heath (BIRM) and Sheriffhales and in a field margin at Brockton, Shipton.



***Ceratochloa cathartica*** (Vahl) Herter

**Rescue Brome**

In 1906 J.C. Melvill reported finding this at Meole Brace and described it as 'spreading throughout England' (*Record of Bare Facts* 16, 1907), but in 1915 he described it as having 'quite disappeared' (*RBF* 25, 1916). It is an uncommon weed in the south of

England, having been introduced from South America in the 18<sup>th</sup> century.

***Brachypodium pinnatum*** (L.) P. Beauv.

**Heath False-brome**

Native. Rare. Casual. Roadsides and waste ground.

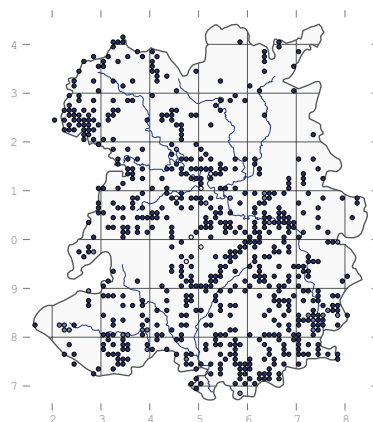
On a roadside in Coalbrookdale (SJ674051, A.G. Blunt, conf. Trueman & P.M. Benoit, 1983), on old limestone workings at Clee Hill (SO601749, J. Bingham, 1990) and on gravel in Shrewsbury Cemetery (SJ488113, D.J. Evans, 2013).

***Brachypodium sylvaticum*** (Hudson) P. Beauv.

**False-brome**

Native. Widespread. Stable. Woods, hedges, road verges, quarries.

First record (as *Bromus sylvaticus*): Williams, c. 1800, 'woods and ditch banks, common.'



In woodland and grassland on base-rich soils. It is recorded in W6 *Salix × fragilis* at Hencott Pool; W6d *Sambucus nigra* by the Severn opposite Shrewsbury Castle; in all stands of W8 *Fraxinus excelsior*, including on Haughmond Hill, Wenlock Edge and Llynclys Hill; W10 *Quercus robur* at Bannister's Coppice, Haughmond Hill and Maddocks Hill (Trueman, 1981); W21 *Crataegus monogyna* scrub on Earl's Hill; and W24 *Rubus fruticosus* at High Rock (Trueman, 1981).

It is also common in grassland, especially in old limestone quarries where it is a vigorous coloniser. There are records of it in CG2 *Avenula pubescens* in Pattens Rock Quarry (Trueman, 1981), Dolgoch Quarry, Jones's Rough and elsewhere; CG3 *Bromopsis erecta* at Ballstone Quarry, Lea Quarry, Lilleshall Quarry, Moelydd and the Foxholes; CG7 *Thymus polytrichus* in Lilleshall and Nantmawr quarries; MG1 *Arrhenatherum elatius* on verges at Lanegreen, the Speller and

Roman Bank and on woodland edge at Shelton Rough; and MG5 *Festuca rubra* at Hilltop, Llynclys Hill, Moelydd and Oretton. Generally lowland, but up to about 250 m in Snailbeach Coppice (SJ3702, 2008).

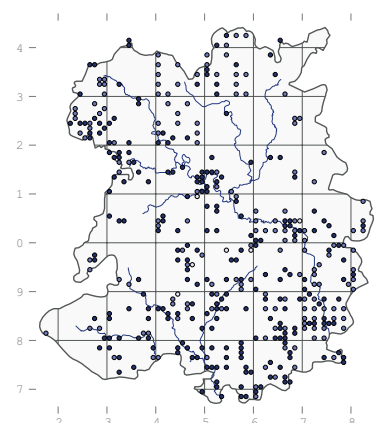
***Elymus caninus*** (L.) L.

**Bearded Couch**

Native. Widespread. Stable. Axiophyte: woodland edges, riverbanks and hedges.

First record (as *Agropyrum caninum*): Williams, c. 1800, 'old hedges.'

Occasional throughout in open, ungrazed woodland, especially by rivers and sometimes around the meres. It is recorded in W5 *Alnus glutinosa* woodland at Top Pool; W6d *Sambucus nigra* by the Severn in Shrewsbury; and W8 *Fraxinus excelsior* at Redhill Coppice, Walkmills and by the Borle Brook at New England; it was also growing in S11 *Carex vesicaria* swamp at the Long Bog, Berrington, in 2010. Another habitat is on roadside verges in limestone areas, such as along the lanes at Nantmawr and Oretton.



***Elytrigia repens*** (L.) Desv.

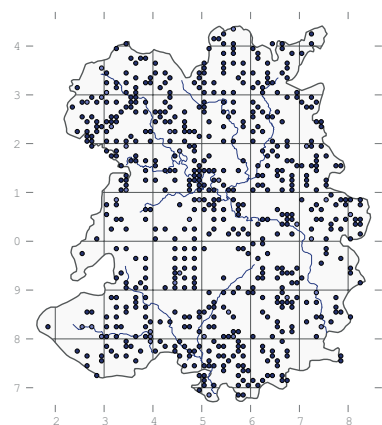
**Common Couch**

Native. Widespread. Stable. Gardens, field margins, river banks, road verges.

First record (as *Triticum repens*): Williams, c. 1800, 'old hedges, gardens, etc.'

Common on disturbed soils on riverbanks, field margins and gardens, and in rank grassland on roadsides etc. It is most characteristic of MG1 *Arrhenatherum elatius* on road verges in places like Preston Montford (S.T. Geikie, 2008) and Lanegreen, by the defunct Severn Valley Railway at Sutton, on the banks of the Severn in Shrewsbury, and on the edges of Ropewalk Meadow. It is also recorded in OV10 *Senecio vulgaris* waste ground in Shifnal; OV14 *Urtica urens* and OV18 *Polygonum aviculare* in arable fields at Edgmond (these

three all by Trueman, 1981); OV25 *Cirsium arvense* in field margins at Kingshead and Norton, Stockton (Trueman, 1981); OV26 *Epilobium hirsutum* tall herb at Betton Pool (M.J. Wigginton, 1979) and by the Severn in Shrewsbury; OV32 *Ranunculus sceleratus* by the Roden at Tilley; W6b *Salix fragilis* woodland in the Old River Bed, Shrewsbury; and in a W8 *Fraxinus excelsior* hedge at Henley.



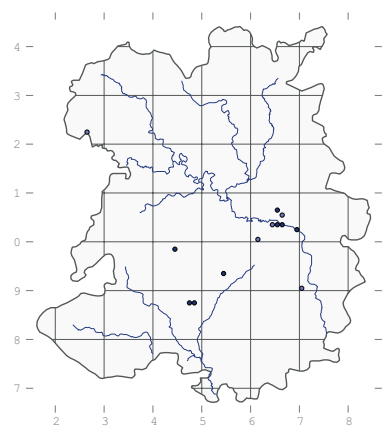
### *Hordeolum europaeus* (L.) Jessen

#### Wood Barley

Native. Scarce. Stable. Axiphyte: woods.

First record: W.H. Painter, 1895, Benthall Edge.

Restricted to ancient W8 *Fraxinus excelsior* woods, mainly along Wenlock Edge. It is fairly frequent still at Benthall Edge and it is often recorded at Harton Hollow, where it was first recorded by Trueman in 1994. Other sites for it include Betchcott Hollow (W.V. Prestwood, 1998), Blodwel Rock (A.K. Thorne, 1982), Edge Wood (C. Walker, 1976), Loamhole Dingle (I. Bolt, 1977), Longville Coppice (Walker, 1976), Lydebrook Dingle (Walker, 1980), Preenshead Wood, Thatcher's Wood (P.M. Stocks, 1982) and Wolverton Wood (Thorne, 2008). There are recent records for all these sites except Blodwel Rock, Edge Wood and Thatcher's Wood.



### *Hordeum vulgare* L.

#### Six-rowed Barley

Neophyte. Scattered.

A bird-seed casual, sometimes growing from what was probably pheasant food in woodland, as at Attingham Park in 1972 (Perring), or from wild bird seed on road verges and river banks, as along the Slang by Kingsland Bridge in 2010.

### *Hordeum distichon* L.

#### Two-rowed Barley

Neophyte. Scattered.

This is cultivated barley, often grown as a crop and occasionally turning up in the edges of fields, along roadsides and on waste ground. It is widespread but only ever a casual, and often ignored by recorders.

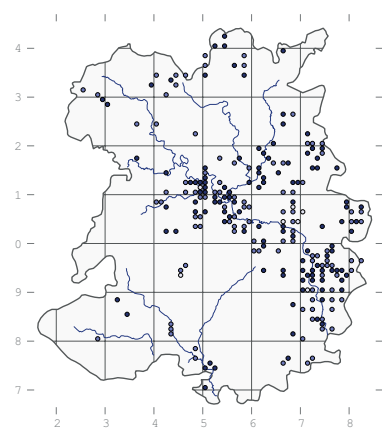
### *Hordeum murinum* L.

#### Wall Barley

Archaeophyte. Local. Stable. Walls, railway lines, river banks, roadsides and waste ground.

First record: Williams, c. 1800, 'under and upon old walls.'

A common weed of disturbed soils, often on roadsides and largely restricted to the valley of the Severn, partly because of habitat and partly because the towns are clustered there. The only community recorded for it is OV10 *Senecio vulgaris* on waste ground at Newport (Trueman, 1981).



### *Hordeum secalinum* Schreber

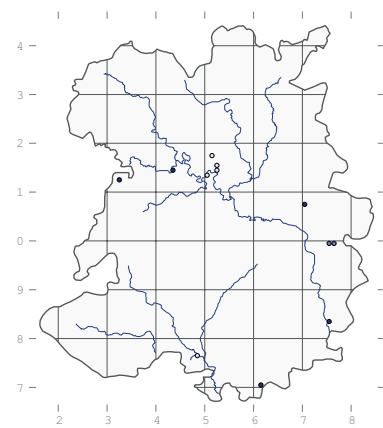
#### Meadow Barley

Native. Rare. Stable. Axiphyte: wet meadows.

First records (as *H. pratense*): Williams, c. 1800, 'on the lawn at Sundorne and adjoining pastures,' and 'in the churchyard at Battlefield and in the meadow adjoining.'

A plant of damp meadows in the SE of Britain, somewhat beyond the

edge of its range in Shropshire. There are recent records of it in a meadow at Great Wollaston Farm (D.L. Buckingham, 2000), on a roadside in Boraston Dale (P.R. Green, 2010), and in a sown grassland at Preston Montford. In the 1970s it grew in a pasture by the R. Worfe at Stableford (W.E. Hutton), but the site was later ploughed.



### *Secale cereale* L.

#### Rye

Neophyte. Rare.

Recorded at Cantlop (A.T. Herbert, 1976) and as a crop volunteer at Lower Netchwood.

### *Triticum aestivum* L.

#### Bread Wheat

Neophyte. Rare.

Widespread as a casual on roadsides and field margins.

### *Danthonia decumbens* (L.) DC.

#### Heath-grass

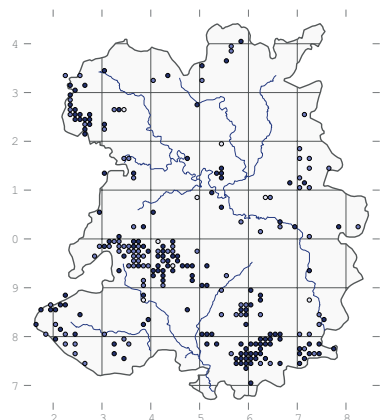
Native. Local. Decreasing. Axiphyte: grassland.

First record (as *Poa decumbens*): Williams, c. 1800, 'moist pastures.'

In species-rich grassland, moorland and flushes, mostly in the uplands but formerly widespread in the lowlands, too. It is mainly found in MG5c *D. decumbens* in places like Crickheath Hill (Packham, 1979), Rushbury (D.H. Wrench, 1994), Llanhowell (Trueman, 1981) and Marl Allotment.

Elsewhere it is recorded in CG2 *Avenula pubescens* at Jones's Rough and Llanymynech Rocks; CG3 *Bromopsis erecta* at the Foxholes; CG10 *Helianthemum nummularia* at Cornbrook (Trueman, 1981); H8 *Ulex gallii* at Prees Heath; H12 *Vaccinium myrtillus* at Rhos Fiddle; MG8 *Caltha palustris* at Morton Pool;

M10 *Carex dioica* on Titterstone Clee (A.K. Thorne, 1999); M13 *Palustriella commutata* on Hope Bowdler (P. Eades, 2010); M15 *Trichophorum germanicum* at Cramer Gutter; M23 *Juncus effusus* on Haughmond Hill; M25 *Molinia caerulea* at Shelve Pool (Trueman, 1981); U5 *Nardus stricta* at Squilver (Trueman, 1981); and W4 *Betula pubescens* on Haughmond Hill. An unusual place for it was in OV25 *Cirsium arvense* on a field margin at Norton, Stockton (Trueman, 1981).



### *Molinia caerulea* (L.) Moench Purple Moor-grass

Native. Local. Stable. Axiophyte: moors, woods and mires.

First record (as *Melica caerulea*): Williams, c. 1800, 'boggy grounds.'

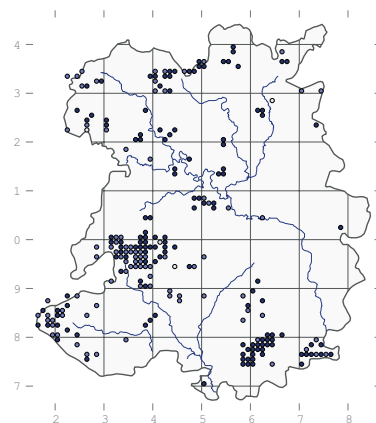
A key component of three vegetation types, each of limited distribution in this county. M24 *Cirsium dissectum* at Cole Mere and Black Coppice; M25 *M. caerulea* at Shelve Pool (Trueman, 1981), Steel Heath and Black Coppice; and W4 *Betula pubescens* in places like Bomere Pool and Lin Can Moss.

Elsewhere *M. caerulea* is a minor element in a variety of other communities. In heaths it is found in H8 *Ulex gallii* at Cramer Gutter; H9 *Deschampsia flexuosa* at Catherton Common (Trueman, 1981) and Lower Short Ditch; and H12 *Vaccinium myrtillus* at Rhos Fiddle.

In grasslands there are records of it in MG5 *Festuca rubra* at Morton Pool (A. Hillman, 1993) and Marl Allotment; MG8 *Caltha palustris* at Morton Pool (D.H. Wrench, 1991); U2 *Deschampsia flexuosa* at Brown Moss; and U5 *Nardus stricta* on Titterstone Clee (A.K. Thorne, 1999).

It is more common in mires such as M2 *Sphagnum fallax* on bogs such as at Wem Moss and Lin Can Moss; M10 *Carex dioica* on Hope Bowdler (P. Eades, 2010); M15 *Trichophorum*

*germanicum* at Cramer Gutter; M16 *Sphagnum compactum* at Hodnet Heath; M22 *Juncus subnodulosus* at Crofts Mill (C. Walker, 1994), Sweeny Fen and elsewhere; and M23 *Juncus effusus* at Black Coppice and Cramer Gutter. It is also found in S24 *Calamagrostis canescens* at Fenemere (M.J. Wigginton, 1979); S26 *Phragmites australis* fen at Black Coppice; and S27 *Comarum palustre* at Bomere and Shomere Pools (both Wigginton, 1979). *Molinia caerulea* ssp. *caerulea* is considered to grow on bogs, whereas ssp. *arundinacea* (Schrank) K. Richt. is the fenland plant. The latter has been recorded at Berrington Pool (Perring, 1993).



### *Phragmites australis* (Cav.) Trin. ex Steudel

#### Common Reed

Native. Local. Stable. Axiophyte: rivers, ditches, canals, wet woodland and fens.

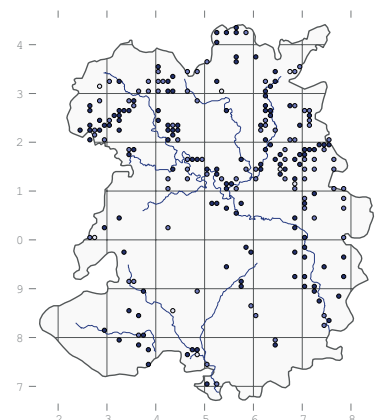
First record (as *Arundo phragmites*): Williams, c. 1800, 'pools, ditches and banks of rivers, not common.'

In a range of habitats, mostly along the margins of rivers or in swamps in river floodplains and around the meres. It is important in successional habitats, ranging from species-poor stands in shallow open water through fens to woodland.

Its main communities are the reedbeds, including S4 *P. australis* in places like Sweat Mere (M.J. Wigginton, 1979) and Fenemere; S24 *Calamagrostis canescens* at Fenemere and Oss Mere; and S26 *P. australis* in meres such as Sweat Mere (Wigginton, 1979) and abandoned canals such as the Shrewsbury Canal at Wappenshall. *Phragmites*-dominated woodlands are rare in Shropshire, but W5a *P. australis* Alder carr has been recorded at Marton Pool, Chirbury.

Elsewhere, it is recorded in M22 *Juncus subnodulosus* at Crose Mere; M27 *Filipendula ulmaria* at Crose Mere;

OV30 *Bidens tripartita* at Marton Pool (Wigginton, 1979); S3 *Carex paniculata* at Marton Pool; S13 *Typha angustifolia* at Fenemere (Wigginton, 1979) and Marton Pool; W5 *Alnus glutinosa* in many places; and W6 *Salix × fragilis* at Fenemere and Marton Pool.



### *Panicum miliaceum* L. Millet

Neophyte. Scarce. Increasing. Waste ground.

First record: J. Martin, 1989, 'old Safeway car park,' Abbey Foregate, Shrewsbury.

A casual on waste ground and pavements, usually in towns. It has also been recorded at the old sewage works at Monkmoor (R.M. Stokes, 1997).



*Bromopsis benekenii*



*Molinia caerulea* at Whixall Moss



***Echinochloa crus-galli* (L.)**

P. Beauv.

**Cockspur**

Neophyte. Rare.

From bird seed or fishing bait in an alleyway in Whitchurch (S. Lewis, 2005, BIRM), by the bridge in Bridgnorth (D.H. Wrench, 2009) and in allotments in Wellington (J. Shanklin, 2010).

***Echinochloa colona* (L.) Link**

**Shama Millet**

Neophyte. Scarce. Increasing. Waste ground.

First record: R.M. Stokes, 1994, 'on the towpath by Greyfriars' Bridge.'

An annual of waste ground, where it probably comes from bird seed. It has been recorded by the river in Bridgnorth (Stokes, 1998), at Coton Hill (Stokes, 2006), on waste ground at Sodylt Bank, and on a pavement in Oswestry (M.E. Roberts, 2010).

***Setaria pumila* (Poir.) Röm. & Schult.**

**Yellow Bristle-grass**

Neophyte. Scarce. Increasing. Waste ground.

First record: Hamilton, 1893, London Road, Shrewsbury (*Record of Bare Facts* 3, 1894).

As a bird-seed alien, on a roadside at Donnington, Lilleshall (R.M. Stokes, 1996), at Llanymynech Station (E.D. Pugh, det. Sinker, 1963), at Queen's Head wharf, in a car park in Oswestry (M. Rogers, 2004) and on the towpath of the Severn at Greyfriars' Bridge, Shrewsbury (Stokes, 1994).

***Setaria verticillata* (L.) P. Beauv.**

**Rough Bristle-grass**

Neophyte. Rare.

Abundant in a field of maize at Cobscot in 2009 (SJ689386, Lockton, BIRM) and on a pavement in Shrewsbury (SJ489128, Q.J. Groom, 2013).

***Setaria viridis* L.**

**Green Bristle-grass**

Neophyte. Rare. Stable. Waste ground.

First record: B. Davies, 1983, 'by level crossing near Gobowen.'

A casual of pavements and waste ground, mainly from bird seed and not persisting. There are records of it on a pavement near the old railway in Oswestry (M. Wainwright, 1984), on the towpath near Greyfriars' Bridge (R.M. Stokes, 1994) and on a roadside at Donnington, Lilleshall (Stokes, 1996).

***Setaria italica* (L.) P. Beauv.**

**Foxtail Bristle-grass**

Collected by C.M. Dony and J.G. Dony on Ludlow rubbish tip in 1956 (LTN).

***Zea mays* L.**

**Maize**

Occasional as a crop volunteer in arable fields.

## Gazetteer

A list of some of the better-recorded sites in the county, giving a 1 km grid reference to help locate it on the map, and which also might be applied to old records. The full list of all recorded sites is too long to reproduce here but can be found on the database.

Abbey Woods, Lilleshall	SJ7414	Bell Coppice (SSSI)	SO7175	Bringewood Chase	SO4873
Abbot's Castle Hill	SO8194	Bennets End Bridge	SO5874	Broadstone, Munslow	SO5489
Abdon	SO5786	Benthall Edge (SSSI)	SJ6603	Brockton, Shipton	SO5793
Acton Burnell	SJ5302	Benthall	SJ6602	Brockton, Sutton Maddock	SJ7203
Acton Lea	SJ5422	Berrington Pool (SSSI)	SJ5207	Brogintyn Park	SJ2731
Acton Round	SO6395	Berrington	SJ5206	Bromfield	SO4876
Acton Scott	SO4589	Betchcott Hill	SO4298	Bromlow	SJ3202
Acton	SO3184	Betton Abbots	SJ5107	Brompton, Chirbury	SO2593
Adderley	SJ6639	Betton Dingle (SSSI)	SJ3102	Broncroft	SO5486
Alberbury Quarry	SJ3613	Betton Moss	SJ6836	Brook Coppice	SJ3901
Alberbury	SJ3514	Betton Pool (SSSI)	SJ5107	Brook Vessons (SSSI)	SJ3800
Albrighton	SJ8104	Bicton	SJ4414	Broom Hill	SJ4103
Alcaston Coppice (SSSI)	SO4787	Big Wood, Eaton Mascott	SJ5305	Broompatch	SJ4206
Alcaston	SO4587	Big Wood, Pitchford	SJ5103	Broseley	SJ6701
Alkmund Park Pool	SJ4716	Bilbatch (SSSI)	SO4095	Brown Clee	SO5986
Allscott (SSSI)	SJ6113	Bilmarsh	SJ4925	Brown Moss (SSSI)	SJ5639
All Stretton	SO4695	Binweston	SJ3004	Brownheath Moss (SSSI)	SJ4530
Anchor	SO1785	Birchen Park	SO7080	Bryn Celyn	SJ2525
Annscroft	SJ4507	Birdsgreen	SO7785	Bryn Uchaf	SJ2125
Ape Dale	SO4788	Bishop's Castle	SO3288	Bryncambric	SO3175
Apley Park	SO7198	Bitterley	SO5677	Bryn-mawr	SO2184
Apley Terrace	SO7297	Black Coppice	SJ4333	Bucknell	SO3573
Apley	SJ6513	Black Hill	SO3279	Buildwas Station	SJ6404
Argoed Wood	SO3085	Black Knoll	SO3988	Buildwas	SJ6304
Ashes Hollow (SSSI)	SO4293	Black Marsh	SO3299	Bullhill	SJ5501
Ashford Bowdler	SO5170	Black Mountain	SO1882	Bulthy Hill	SJ3113
Asterley	SJ3707	Black Rhadley (SSSI)	SO3495	Burcotgate	SJ6110
Astley	SJ5218	Blackbridge Quarry	SJ2723	Burnt House	SO5683
Aston Botterell	SO6384	Blackfriars Meadow	SJ4912	Burrs Field	SJ4811
Aston Eyre	SO6594	Blake Mere	SJ4133	Bury Ditches	SO3283
Aston Locks	SJ3326	Blakeway Coppice (SSSI)	SO5998	Bush Wood (SSSI)	SO7082
Aston Munslow	SO5186	Blakeway Hollow	SO6099	Bushmoor Coppice	SO4387
Aston Rogers	SJ3406	Blists Hill	SJ6903	Bwlch	SJ2525
Aston	SJ6109	Blodwel Hall	SJ2622	Caer Caradoc	SO3075
Atcham	SJ5409	Blodwel Quarry	SJ2523	Caer Caradoc	SO4795
Attingham Park	SJ5510	Blodwel Rock (SSSI)	SJ2622	Calcott Moss	SJ4414
Aychley Farm	SJ6034	Boiling Well (SSSI)	SO4294	Caldy Bank	SO2383
Bache	SO4681	Bolas Heath	SJ6721	Callow Hollow (SSSI)	SO4292
Badger Dingle	SO7699	Bomere Heath	SJ4719	Callow Lane Meadows (SSSI)	SJ3704
Badger	SO7699	Bomere Pool (SSSI)	SJ4908	Calverhall	SJ6037
Bagginswood	SO6881	Boraston Dale	SO6170	Candles Opencast Site	SJ6506
Baggy Moor	SJ3926	Boreatton Moss	SJ4122	Candy Valley	SJ2528
Bailey Brook	SJ5734	Boreton Bank	SJ5107	Cantern Dingle	SO7094
Ballstone Quarry	SO6199	Borle Brook	SO7283	Cantlop Wood	SJ5104
Bannister's Coppice	SJ6102	Bouldon	SO5485	Cantlop	SJ5105
Battlefield Church	SJ5117	Bourton Westwood	SO6098	Cardeston	SJ3912
Battlefield	SJ5116	Bourton	SO5996	Carding Mill Valley (SSSI)	SO4494
Bayston Hill	SJ4808	Bowbrook	SJ4512	Carreg-y-big Quarry	SJ2432
Beam House Farm	SJ4018	Bowhills Dingle	SO7884	Catherton Common (SSSI)	SO6378
Beambridge	SO5388	Brandhill	SO4278	Caughley	SJ6900
Beckbury	SJ7601	Brandwood	SJ4626	Causewaywood	SO5298
Becks Field	SJ4812	Bransley	SO6575	Caynham Camp	SO5473
Bedstone	SO3675	Breakneck Bank (SSSI)	SO7176	Caynton	SJ6921
Beech Dingle	SJ2703	Bridgnorth	SO7193	Cefn Canol	SJ2331
Beechfield Dingle	SJ3005	Bridgwalton	SO6892	Cefn Coch	SJ2332
Beggarhill Brook Farm	SO6397	Brineddin Wood	SO3176	Cefn Lane, Nantmawr	SJ2524

Cefn Vron	SO1683	Cosford	SJ7905	Eaton Mascott	SJ5305
Chapel Fields, Tilstock	SJ5337	Coton Hall	SO7786	Eaton upon Tern	SJ6523
Chapel Lawn	SO3176	Cound Hall	SJ5605	Eaton-under-Heywood	SO5089
Charlton Hill	SJ5807	Cound Moor	SJ5502	Ebnal Hall	SJ3134
Charlton	SJ5911	Cound Quarry	SJ5505	Edge Wood (SSSI)	SJ6100
Chatford	SJ4705	Cound Stank	SJ5405	Edgebolton Farm	SJ5721
Chatmore	SO6285	Cound	SJ5504	Edgmond	SJ7219
Chatwall	SO5197	Coundarbour	SJ5505	Edstaston	SJ5131
Chelmarsh	SO7287	Cow Hall	SO2281	Ellerdine Heath	SJ6121
Chemistry	SJ5241	Craig Sychtyn (SSSI)	SJ2325	Ellerton Wood	SJ7127
Cheshire Coppice	SJ6213	Craig-llwyn	SJ2327	Ellesmere	SJ4034
Cheswardine Hall	SJ7230	Craig-y-rhiw	SJ2329	Ensdon	SJ4016
Chetwynd Aston	SJ7517	Cramer Gutter (SSSI)	SO6479	Ercall Heath	SJ6822
Chetwynd Heath	SJ7122	Cranberry Moss	SJ3620	Eudon George	SO6888
Childs Ercall	SJ6625	Craven Arms	SO4382	Eyton on Severn	SJ5706
Chorley Covert (SSSI)	SO7083	Cressage	SJ5904	Eyton upon the Weald Moors	SJ6514
Choulton	SO3788	Crickheath Hill (SSSI)	SJ2923	Eyton	SJ4422
Church Aston	SJ7417	Crickmery	SJ6729	Eyton	SO3787
Church Pulverbatch	SJ4302	Criftin Brook	SO3895	Faintree	SO6689
Church Stretton	SO4593	Criftin Quarry	SJ5513	Farden	SO5775
Churton Dingle	SJ4302	Crofts Mill (SSSI)	SJ3024	Farley Dingle (SSSI)	SJ6302
Clarepool Moss (SSSI)	SJ4334	Cronkhill	SJ5308	Farlow	SO6480
Claverley Brook	SO7894	Croze Mere (SSSI)	SJ4330	Farmcote	SO7791
Claverley	SO7993	Crosslanes Farm	SJ3218	Felton Butler	SJ3917
Clee Hill Quarry (SSSI)	SO5975	Cruckmeole	SJ4309	Fenemere (SSSI)	SJ4422
Clee Liberty	SO5884	Cruckton	SJ4310	Fernhill Pastures (SSSI)	SJ3232
Clee St Margaret	SO5684	Crudgington	SJ6318	Ford Heath	SJ4011
Cleestanton	SO5779	Crumpsbrook	SO6278	Fordhall Farm	SJ6432
Cleeton St Mary	SO6178	Cuckoopen Coppice (SSSI)	SO5380	Fox Covert	SJ4901
Cleobury Mortimer	SO6775	Culmington	SO4982	Fox Farm	SJ5209
Clive	SJ5124	Cwm Barn	SO3479	Frankwell	SJ4913
Clun Castle	SO2980	Cwm Cold	SO2477	Frodesley	SJ5101
Clun	SO3080	Cwm Collo	SO2378	Fron Wood, Mainstone	SO2787
Clungunford	SO3978	Cwm Ffrydd	SO2586	Furlong	SO5681
Clunton Coppice (SSSI)	SO3480	Cwm	SO3379	Furnace Mill	SO7176
Clunton Hill	SO3482	Cynynion	SJ2430	Garmston	SJ6006
Clunton	SO3381	Dale Coppice	SJ6704	Garn Bank	SO2975
Coalbrookdale	SJ6604	Dawes Lines	SO3282	Gatten Plantation (SSSI)	SO3798
Coalport	SJ6902	Day Houses	SO5496	Gibbons Coppice	SJ6207
Coats Wood	SO5291	Dee Side	SJ3441	Gittinshay Wood	SJ3800
Cobscot	SJ6838	Derrington (SSSI)	SO6090	Glasshouse Green	SO6277
Coed yr Allt	SJ3239	Detton	SO6679	Gleedon Hill	SJ6201
Coed-detton	SO2973	Diddlebury	SO5085	Gleedsmore	SO7189
Cold Oak Farm	SO5775	Ditton Mill	SO6375	Glopa	SJ2631
Cole Mere (SSSI)	SJ4333	Ditton Priors	SO6089	Glynmorlas	SJ3137
Colehurst	SJ6631	Dolgoch Quarry	SJ2724	Goat Hill	SO4179
Colleybrook Green	SO5874	Donnington	SJ5707	Gobowen	SJ3033
Colliersford Gutter (SSSI)	SO4297	Dorrington	SJ4702	Gogbatch (SSSI)	SO4597
Comley Quarry (SSSI)	SO4896	Drury Lane	SJ5714	Gorstley	SO5874
Condover	SJ4905	Duddlewick	SO6583	Grange Farm, Edgerley	SJ3518
Conduit Head	SJ4711	Dudleston	SJ3438	Granville Country Park	SJ7112
Coneyburg Wood	SJ6727	Dudmaston	SO7488	Gravels	SJ3300
Conquer Moor Heath	SJ6719	Dummy's Wood	SJ2624	Gravenor	SO3794
Coppice Leasowes	SO4694	Duxmoor	SO4477	Great Hagley Dingle	SO3376
Coppicegate	SO7380	Dyffryd	SJ2919	Great Oxenbold	SO5991
Copthorne Mere	SJ4712	Eardington Plant Quarry	SO7289	Greete	SO5770
Corbett's Dingle	SJ6902	Earl's Hill (SSSI)	SJ4104	Grinshill Hill (SSSI)	SJ5223
Corfton Bache	SO4985	Earlsdale	SJ4105	Grit Hill	SO3398
Corfton	SO4984	Easthope Wood	SO5695	Gulley Green (SSSI)	SJ3101
Cornbrook	SO6075	Eastwall Coppice	SO5392	Gulley Green	SO4896
Corra Common	SJ6138	Eaton Constantine	SJ5906	Habberley Brook (SSSI)	SJ3903



Hadnall	SJ5219	Hopton Cangeford	SO5480	Little Weston	SO5871
Halesfield	SJ7105	Hopton Castle	SO3678	Llanbrook	SO3578
Halfpenny Green	SO8291	Hopton Hill	SJ3820	Llandinshop	SO2476
Hall of the Forest	SO2083	Hopton Park	SO3677	Llanfair Waterdine	SO2480
Halston Hall	SJ3431	Hopton Titterhill	SO3577	Llanforda	SJ2628
Hampton Loade	SO7486	Hopton Wafers	SO6376	Llangollen Canal	SJ4133
Hardwick	SO3690	Hoptonheath	SO3877	Llanhowell	SO3479
Hardwicke	SJ5121	Horderley	SO4086	Llanyblodwel	SJ2422
Harley	SJ5901	Hordley	SJ3830	Llanymynech Hill (SSSI)	SJ2620
Harmer Hill	SJ4922	Horseditch	SO5977	Llawnt	SJ2431
Harnage	SJ5604	Hortonwood	SJ6813	Lloyds Coppice	SJ6803
Harold's Bank	SJ4203	Howle	SJ6923	Llyn Rhuddwyn	SJ2328
Harpwood	SO6891	Hudwick Dingle	SO6392	Llynclys Hill (SSSI)	SJ2824
Harthall	SO5970	Hughley Brook	SO5596	Loamhole Dingle (SSSI)	SJ6605
Harton Hollow	SO4887	Hughley	SO5697	Long Pike Hollow	SO2186
Harton	SO4888	Inwood	SO4696	Longdon on Tern	SJ6115
Hatton Grange	SJ7604	Jiggers Bank	SJ6605	Longdon Wood (SSSI)	SO7576
Haughmond Abbey	SJ5415	Jonathan's Hollow	SO4496	Longford	SJ6433
Haughmond Hill	SJ5313	Jones's Rough (SSSI)	SJ2424	Longnor	SJ4800
Hawkstone Park	SJ5729	Kemberton	SJ7304	Longslow	SJ6535
Haybridge	SO6473	Kempster's Hill	SJ3114	Longville	SO5393
Hays Coppice	SJ4304	Kenley Common	SO5698	Lord's Meadows	SJ8203
Hayton's Bent	SO5280	Kenley	SJ5600	Loton Park	SJ3513
Haywood	SJ7002	Kenstone	SJ5928	Lower Betton	SJ5208
Hazler Hill	SO4692	Ketley Pitmounds	SJ6811	Lower Broughton Farm	SO3190
Heath Mynd	SO3393	Kettle Mere	SJ4134	Lower Down	SO3384
Heathgates Landfill Site	SJ5733	Kingshead	SO4776	Lower Faintree	SO6588
Helmeth Hill	SO4693	Kingsland	SJ4811	Lower Frankton	SJ3631
Henbarns Moor	SJ3826	Kinnerley	SJ3320	Lower Ledwyche	SO5374
Hencott Pool (SSSI)	SJ4916	Knockin Heath	SJ3521	Lower Netchwood	SO6291
Henley	SO5476	Knockin	SJ3322	Lower Short Ditch	SO2288
Heron's Gate	SO8084	Knowbury	SO5774	Lower Wallop	SJ3207
High Meadow Farm	SO5271	Knowle Wood	SO6073	Lower Wigmore	SJ3411
Highley Alveley Country Park	SO7583	Knowlegate	SO5973	Lubberland (SSSI)	SO6277
Highley	SO7483	Knuck Wood	SO2786	Ludlow	SO5174
Hill Houses	SO6379	Kynnersley	SJ6716	Lyd Hole	SJ4105
Hillcop Bank	SJ5327	Lady House Farm	SJ3402	Lydebrook Dingle	SJ6606
Hilltop	SO5696	Lakehouse Dingle	SO7586	Lye	SO3375
Hilton Sand Pit	SO7794	Langley Wood	SJ3206	Lyneal Moss	SJ4434
Hine Heath	SJ5826	Lea Quarry	SO5898	Lynn	SJ7815
Hinstock	SJ6926	Lea South Ponds	SO5997	Lyth Hill	SJ4606
Hinton	SO6582	Leamoor	SO4386	Maddox's Coppice	SJ3803
Hinwood	SJ3608	Ledwyche Brook	SO5768	Madeley	SJ6904
Hobarris Wood	SO3077	Leebotwood	SO4798	Maesbrook	SJ3021
Hobsley Coppice	SJ5200	Leighton	SJ6105	Maesgwyn	SO2388
Hockleton	SJ2700	Lightmoor	SJ6705	Mahorall Valley	SO5973
Hodnet Heath (SSSI)	SJ6226	Lightspout Hollow (SSSI)	SO4395	Malehurst	SJ3806
Hodnet	SJ6128	Lightwood	SJ6929	Malpass Wood	SO7077
Hogstowe Meadows	SJ3600	Lightwood	SO6491	Marchamley Wood	SJ5931
Holdgate	SO5689	Lilleshall Quarry	SO5796	Marche	SJ3310
Holly Coppice	SJ5414	Lilleshall	SJ7315	Marehay Farm	SO3898
Hollyhurst	SO4797	Lily Wood	SO5190	Marked Ash (SSSI)	SO5190
Honeyhole	SO3375	Limekiln Wood	SJ6509	Market Drayton	SJ6734
Honington Grange	SJ7214	Lin Can Moss (SSSI)	SJ3721	Marl Allotment	SJ5035
Hoo Farm	SJ6915	Lincoln Hill (SSSI)	SJ6603	Marrington Dingle	SO2797
Hope Bagot	SO5874	Lingcroft Pool	SJ4206	Marrington	SO2796
Hope Bowdler	SO4792	Linley Brook	SO6897	Marshbrook	SO4489
Hope Coppice (SSSI)	SJ3501	Lionlane Wood	SJ4038	Marton Pool, Baschurch	SJ4423
Hopes Wood (SSSI)	SO4493	Little Hudwick	SO6292	Marton Pool, Chirbury (SSSI)	SJ2902
Hopesay Hill	SO3983	Little Stretton	SO4491	Meadowtown	SJ3101
Hopesay	SO3983	Little Sutton	SO5182	Medley Park	SO4782

Melverley Farm	SJ5840	Nobold	SJ4710	Polesgate Farm	SJ3804
Melverley	SJ3316	Noneley	SJ4727	Pontesbury	SJ3906
Meole Brace	SJ4810	North Rowens	SJ2907	Pontesford Hill	SJ4005
Mere Pool	SJ5110	Northwood	SJ4633	Pontesford	SJ4006
Merrington Green	SJ4620	Norton in Hales	SJ7038	Porth-y-waen	SJ2623
Mickley	SJ6132	Nortoncamp Wood	SO4481	Posenhall	SJ6501
Middle Spoad	SO2582	Novers Hill	SO4595	Poynton	SJ5717
Middleton Scriven	SO6887	Oak Farm, Marton	SJ4424	Preenshead Wood	SJ6902
Middleton	SO5377	Oakly Park	SO4876	Prees Branch Canal (SSSI)	SJ4933
Middletown Hill	SJ3013	Oaks Wood	SJ4104	Prees Green	SJ5631
Mile House	SJ3028	Oerley Reservoir, Oswestry	SJ2729	Prees Heath (SSSI)	SJ5536
Milk Hill (SSSI)	SO3397	Offa's Dyke	SJ2525	Prescott Mill	SO6681
Mill Wood	SJ4137	Oilhouse Coppice	SJ6704	Prescott	SO6681
Milson Wood	SO6372	Old Farm Quarry, Stapleton	SJ4704	Presthope	SO5897
Milson	SO6372	Old Hardwick	SJ3634	Preston Gubbals	SJ4919
Minton Batch (SSSI)	SO4191	Old Oswestry	SJ2930	Preston Montford	SJ4314
Minton	SO4390	Old Rectory Wood	SO4493	Priorslee Lake	SJ7209
Moelydd (SSSI)	SJ2425	Whitchurch Canal	SJ5341	Pudding Bag	SO5492
Mogg Forest	SO5694	Old Woods	SJ4520	Pulverbach	SJ4202
Monkhopton	SO6293	Oldfield	SO4082	Quarry Plantation	SO4377
Monkmoor	SJ5213	Ollerton	SJ6425	Quarry Wood, Hinstock	SJ6827
Montford	SJ4114	Onibury	SO4579	Quatford	SO7390
Montgomery Canal (SSSI)	SJ3326	Oreton	SO6580	Quern Farm	SO3276
More Quarry	SO3293	Oss Mere (SSSI)	SJ5643	Rabbit Warren	SO3887
More	SO3491	Oswestry Racecourse	SJ2631	Randlay Wood	SJ7008
Moreton Say	SJ6234	Oswestry Railway Station	SJ2930	Ratlinghope	SO4096
Moreton	SJ2935	Oswestry	SJ2929	Ravenshaws Gorse	SJ5710
Morton Pool (SSSI)	SJ3023	Overley	SJ6010	Rea Brook Valley	SJ5011
Morville	SO6694	Overton Common	SO4971	Redhill Coppice	SJ4609
Mousecroft Lane Gravel Pit	SJ4710	Overton Lodge	SO5072	Redhill	SJ7310
Mow Cop	SJ7324	Overton	SO6686	Rednal Basin	SJ3527
Much Wenlock	SO6299	Oxon Pool	SJ4513	Rednal Moss	SJ3427
Muckleton	SJ5921	Pant Quarries	SJ2722	Rednal	SJ3628
Muckley Cross	SO6495	Pant	SJ2722	Resting Hill	SJ3701
Munslow	SO5287	Park Hall, Whittington	SJ3131	Rhespass	SO2584
Muxton Marsh (SSSI)	SJ7113	Pattens Rock Quarry	SJ6603	Rhos Fiddle (SSSI)	SO2085
Myddle	SJ4623	Paulith Bank	SJ4000	Rhos-y-llan Wood	SJ3136
Mynd	SO3574	Peaton	SO5384	Rhydycroesau	SJ2430
Mytton	SJ4417	Pennerley Meadows (SSSI)	SO3599	Richards Castle	SO4969
Nant-isaf	SJ2634	Pentre Hill	SO3176	Rickhouse Coppice	SO5391
Nantmawr	SJ2424	Pentre Hodre	SO3276	Riddings	SO1985
Nant-y-mysseis	SJ3009	Pentre Wood	SJ2737	Riddles Wood	SJ4001
Near Gatten	SO3998	Pentre	SJ3617	Rindleford	SO7395
Neen Savage	SO6777	Pentre-Dafydd	SJ2832	River Camlad	SO2499
Neen Sollars	SO6672	Pentregeaer	SJ2328	River Ceiriog	SJ2837
Neens Hill	SO6671	Pentreheylin Hall	SJ3019	River Clun	SO3080
Neenshilltop	SO6771	Pentre-pant	SJ2831	River Corve	SO5287
Nesscliffe	SJ3819	Peplow	SJ6324	River East Onny	SO3895
Netchwood	SO6192	Perkins Beach	SO3699	River Kemp	SO3285
New Invention	SO2976	Perry House	SO7885	River Onny	SO3689
New Marton	SJ3334	Pimley	SJ5214	River Roden	SJ5816
New Pool Hollow (SSSI)	SO4394	Pitchford Park Farm	SJ5009	River Severn	SJ4912
New Wood, Milson	SO6472	Plaish	SO5396	River Teme (SSSI)	SO5074
New Works	SJ6608	Plas Cerrig	SJ2721	River Tern	SJ5509
Newport Canal (SSSI)	SJ7419	Plas-yn-Grove	SJ3837	River Vyrnwy	SJ3117
Newton Dingle	SO5781	Plas-yn-y-coed	SJ3340	Rock of Woolbury	SO3179
Newton Mere	SJ4234	Plattmill	SJ4022	Rockhill	SO2878
Newton	SJ4817	Plealey	SJ4206	Roman Bank (SSSI)	SO5191
Newtown, Wem	SJ4831	Plowden Woods	SO3886	Romsley	SO7882
Nills Hill Quarry	SJ3905	Plowden	SO3887	Ropewalk Meadow (SSSI)	SJ6605
Nipstone Rock	SO3596	Poles Coppice	SJ3904	Rough Park	SJ6704

Row Coppice	SJ5002	Spurtree	SO6069	The Lawley	SO4997
Rowley, Worthen	SJ3006	Squilver	SO3797	The Long Bog	SJ5206
Rowton Castle	SJ3712	St Martin's	SJ3236	The Long Mynd (SSSI)	SO4494
Rowton, Craven Arms	SO4180	Stableford	SO7598	The Lump, Priestweston (SSSI)	SO2998
Rowton, Ercall Magna	SJ6119	Stanbatch	SO4093	The Marsh, Hinstock	SJ6925
Ruewood Pastures (SSSI)	SJ4927	Stanford	SJ3312	The Mere, Ellesmere	SJ4034
Ruewood	SJ4927	Stanton Heath	SJ5823	The Novers	SO5973
Rushbury	SO5191	Stanton Lacy	SO4978	The Old River Bed (SSSI)	SJ4914
Rushmoor	SJ6113	Stanton Long	SO5790	The Plantation	SJ4034
Ruthall	SO5989	Stanton on Hine Heath	SJ5624	The Quarry, Much Wenlock	SO6199
Ruyton-XI-Towns	SJ3922	Stanwardine in the Fields	SJ4123	The Quarry, Shrewsbury	SJ4812
Ryton	SJ7602	Stanwardine in the Wood	SJ4328	The Speller	SO5189
Sallow Coppice	SO4282	Stanway Coppice	SO5491	The Stiperstones (SSSI)	SJ3600
Sansaw Heath	SJ5122	Stapeley Hill	SO3098	The Walls, Chesterton	SO7896
Saplins	SJ6305	Stapleton	SJ4704	The Wrekin (SSSI)	SJ6308
Scotts Wood	SO4775	Stars Coppice	SO5090	The Wyke	SJ7206
Seifton Batch	SO4784	Steel Heath	SJ5436	The Yesters	SJ4321
Selattyn Hill	SJ2534	Stepple	SO3282	Three Gates	SO2685
Selattyn	SJ2633	Stevenshill (SSSI)	SJ5503	Thresholds	SO4199
Selley	SO2676	Stirchley	SJ7006	Tibberton Moor	SJ6818
Severn Valley Railway	SO7483	Stocking Meadows (SSSI)	SO6580	Tibberton	SJ6820
Shadwell Quarry	SJ6200	Stoke Park	SJ6527	Tick Wood (SSSI)	SJ6403
Sharpstones Hill	SJ4909	Stoke Wood (SSSI)	SO4281	Ticklerton	SO4890
Shavington Park	SJ6338	Stokesay	SO4381	Tilley	SJ5027
Shawbury Heath	SJ5419	Stoney Stretton	SJ3809	Timlet	SJ7707
Shawbury	SJ5521	Stoneyhill	SJ6605	Tinkershill Wood	SO5272
Sheinton	SJ6103	Stow Hill	SO3174	Tinmill Wood	SO4675
Shelderton	SO4077	Stowe Church	SO3173	Titterstone Clee (SSSI)	SO5977
Shelfield	SO3499	Strefford	SO4485	Tong Norton	SJ7908
Shelton Rough	SJ4613	Stretton Heath	SJ3710	Tong Park Farm	SJ8006
Shelve Pool (SSSI)	SO3397	Stretton Westwood	SO5998	Tong	SJ7907
Sheriffhales	SJ7512	Sutton Hill	SO5382	Top Pool	SJ5207
Shifnal	SJ7407	Sutton Wood	SJ7101	Totterton	SO3687
Shipton	SO5691	Sutton, Shrewsbury	SJ5010	Townbrook Hollow (SSSI)	SO4493
Shirlett Common	SO6598	Swan Hill	SO4177	Trapnell Brook	SO6371
Shomere Pool (SSSI)	SJ5007	Sweat Mere (SSSI)	SJ4330	Treen Pits	SO5975
Shotton	SJ4921	Sweeny Fen (SSSI)	SJ2725	Treflach	SJ2525
Shrawardine Pool (SSSI)	SJ3916	Tankerville Hollow (SSSI)	SO3599	Trefonen	SJ2526
Shrewsbury Canal	SJ5411	Tantree Bank	SJ2905	Trelarney	SO6479
Shrewsbury	SJ4912	Tasley	SO6994	Trench Pool	SJ6812
Shropshire Union Canal	SJ6640	Telford Town Park	SJ7008	Trench	SJ6912
Sibberscote Manor	SJ4207	Telford	SJ6908	Trefonen Marshes (SSSI)	SJ2426
Sidbury	SO6885	Ternhill	SJ6332	Tugford	SO5587
Silvertrees	SJ6605	Tetchill	SJ3932	Tunstall Wood	SJ6226
Silvington Common	SO6279	Thatchers Wood (SSSI)	SO7090	Turfmoor	SJ3518
Skeys Wood	SO7777	The Alders, Wollaston	SJ3312	Twitchen	SO3679
Skyborry Green	SO2674	The Batch (SSSI)	SO4495	Twyford Vownog	SJ326
Sleap	SJ4826	The Berth	SJ4223	Tynydrain	SJ2432
Sleapford	SJ6315	The Bog	SO3597	Uckington Heath	SJ5610
Smeesley	SO6587	The Bog, Wilderhope	SO5492	Uffington	SJ5213
Smethcott	SO4599	The Brickyard, Wheathill	SO6082	Underton	SO6891
Smithy Moor	SJ4131	The Cliffe	SJ3920	Upper Broughton	SO3090
Snailbeach (SSSI)	SJ3702	The Cote	SO2079	Upper Cound	SJ5504
Snipe Bog	SJ5206	The Ercall (SSSI)	SJ6409	Upper Hayton	SO5181
Sodom Pastures	SO6074	The Foxholes	SO6480	Upper Trefnant	SJ2910
Sodylt Wood	SJ3440	The Highlands Farm	SO6785	Upper Treverward	SO2778
Soudley	SJ7228	The Hollies Farm	SO3799	Uppington	SJ5909
Soudley	SO4791	The Hollies (SSSI)	SJ3801	Upton Cressett	SO6592
Sowdley Wood	SO3280	The Home	SO3790	Vane Coppice	SJ6605
Spoad Hill	SO2580	The Hope	SO5178	Venus Pool	SJ5406
Spoonhill	SO6295	The Humbers	SJ6914	View Edge	SO4280



Viroconium	SJ5608	Wood Lane Gravel Pit	SJ4232
Vron Wood	SO1682	Woodcote	SJ7715
Wagbeach	SJ3602	Woofferton	SO5168
Walcot Park	SO3485	Woolston	SJ3224
Walford Pool	SJ4320	Wootton	SJ3327
Walkmill Marsh	SJ6733	Wootton	SO7788
Walkmills	SO4699	Worsley	SO4596
Walton	SJ5818	Worthen	SJ3204
Walton	SO4679	Wotherton	SJ2800
Warfield Bank	SO3777	Wrentnall	SJ4203
Waters Upton	SJ6319	Wrickton Hall Farm	SO6485
Webscott	SJ4722	Wrockwardine	SJ6212
Weirhill Wood	SJ5212	Wroxeter Eyot	SJ5608
Wellington	SJ6511	Wroxeter	SJ5608
Welsh Frankton	SJ3633	Wyre Forest	SO7576
Welshampton	SJ4334	Yeaton	SJ4319
Wem Moss	SJ4734		
Wenlock Edge	SO5998		
Wenlocks Wood	SJ6307		
Wentnor	SO3892		
Wern ddu Quarry	SJ2326		
Wesley Brook	SJ7404		
West Felton	SJ3425		
Westhope	SO4786		
Weston Heath	SJ5627		
Weston Lullingfields	SJ4224		
Weston Rhyn	SJ2835		
Weston	SO5992		
Weston, Stowe	SO3273		
Westonwharf	SJ4125		
Whiston Meadows	SJ7802		
Whitbatch	SO5177		
Whitchurch	SJ5441		
Whitcliffe	SO5074		
White Ladies Priory	SJ8207		
White Mere	SJ4132		
Whitehaven	SJ2724		
Whithalls Wood	SO7485		
Whitley Manor Farm	SJ7423		
Whittery Wood	SO2798		
Whittingslow	SO4389		
Whittington	SJ3231		
Whitton Grange	SJ3308		
Whittytrees	SO4478		
Whitwell Coppice	SJ6201		
Whixall Moss	SJ4935		
Wilcott Marsh Quarry	SJ3818		
Wild Moor	SO4296		
Wilderhope	SO5492		
Wilderley Hill	SO4199		
Wilderley	SJ4301		
Wilderness Meadows	SJ6605		
Wildmoor Pool	SO4296		
Wild's Coppice	SO5379		
Willey Furnace	SJ6700		
Willey	SO6799		
Wimperhill Wood	SO7476		
Windmill Hill	SJ6200		
Winscote Hills	SO7296		
Wollerton	SJ6229		
Wolverton Wood	SO4787		

## Recorders and determiners

List of all the recorders and referees who have records in the database. The number of records attributed to a recorder (given in brackets) can be quite misleading, but is an indication of their overall contribution.

Acock, Mr P.J., St Mary Cray, Kent (2)	Ball, Mr J., Kensington (5)	Blackstock, Mr N., Ormskirk (1)
Adams, M. (1)	Ball, Ms L., Gwynedd (1)	Blackstock, Mr T.H., Bangor, Gwynedd (10)
Adams, Mr B.A., Kettering, Northants (1)	Ballantyne, Mrs E., Minsterley (1)	Blake, Mr W. (1)
Adams, Mr G.D., Bishops Castle (1)	Baller, G.H. (1)	Blanch, W. (3)
Aikin, Mr A., London & Shrewsbury (48)	Baly, Mr J.S. (29)	Blockeel, Dr T.L., Sheffield (35)
Airy Shaw, Mr H.K., Kew (1)	Banbury, V.A., Shrewsbury (1)	Bloom, Mr G., Abingdon, Oxfordshire (364)
Akeroyd, Dr J.R., Tisbury, Wilts. (7)	Bangham, Ms H. (1)	Blower, Miss, Shrewsbury (1)
Albery, Mr J., Wildlife Trust (127)	Barker, Dr A.J., Eastleigh, Hants. (89)	Bloxham, Rev A., Harborough Magna (70)
Alder, Mr J., British Waterways (108)	Barlow, Ms L.J., Shrewsbury (33)	Blunt, Miss, Meole Brace (1)
Aldous, A.E., MANCH (2)	Barnett, Dr H., Church Stretton (1)	Blunt, Mr A.G., Alveley (4)
Alexander, Dr K.N.A., Exeter (118)	Barnett, Mrs N.H., Lea Cross (4)	Blunt, Mr T.P., Shrewsbury (38)
Alexander, Ms L., Edinburgh (80)	Barrett, Mr S. (14)	Boardman, A. (2)
Allbutt, Mrs E., Church Stretton (4)	Barrington, Mr R.M., Co. Wicklow (1)	Boardman, Mr P., Shrewsbury (5)
Allen, Dr D.E., Winchester, Hants. (3)	Bateman, Prof R.M., London (8)	Bodenham, Mr J., Newport (1)
Allen, Miss, Middleton Scriven (1)	Bates, Mr J.W. (84)	Bodenham, Mr T., Shrewsbury (79)
Allen, Mr W.B., Benthall (337)	Bates, Mr K. (10)	Bodley, Mrs M.A., Wedmore, Somerset (135)
Allen, Mrs W.B., Benthall (1)	Bayley, Mr J.A., Shrewsbury (331)	Bolt, Mr I. (1,376)
Allott, Mr A.J., Shrewsbury (32)	Baynes, Mr J., Shrewsbury (12)	Boniface, Mr R.A., Eastbourne, Sussex (1)
Allwood, Ms J., Hayton (445)	Beacall, Mr W., Shrewsbury (343)	Bonner, Mr I.R., Anglesey (130)
Almqvist, Dr S.O.I., Sweden (1)	Beardall, Mr J. (1)	Bonner, Mrs S.P., Anglesey (8)
Alston, Mr A.H.G., Kew (2)	Beardsley, T. (1)	Bonney, Rev A. (8)
Anderson, Mr N., Shrewsbury (84)	Beckwith, Mr W.E., Shrewsbury (2,385)	Boon, Mr C.R., Bedford (2)
Anderson, Ms M. (144)	Beddows, Ms V., Munslow (1)	Borror, Mr W., Henfield, Sussex (43)
Andrew, Mr A. (1)	Beddows, Rev (1)	Bosanquet, Mr S.D.S. (23)
Andrew, Ms K., Ludlow Museum (1)	Beeby, Mr W.H., Long Ditton, Surrey (1)	Bostock, Dr J.L. (10)
Andrews, Mr C.E.A., Birmingham (33)	Bell, Miss (1)	Boswell, Mr H., Oxford (2)
Andrews, Mr E., Tasley (2)	Bell, Mr A.P., Market Drayton (111)	Boswell, Mr J.T.I., Balmuto, Fife (3)
Andrews, Mr E., Ludlow (2)	Bell, Mr K.K., Bayston Hill (171)	Bourne, Mr P.J., Brighton (6)
Andrews, Mr H., Devon (214)	Bell, Rev B., Clungunford (1)	Bowen, Dr H.J.M., Blandford, Dorset (2)
Anslow, Mr R., Wellington (165)	Bell, Rev T.B., Stranraer (2)	Bowen, Mr J. (2)
Anstice, Mr W., Ironbridge (11)	Bellamy, Dr D.J., University of Durham (113)	Bowler, Miss, Otley, West Yorkshire (110)
Appleyard, Mrs J. (52)	Bellamy, Mr F.A. (1)	Bowles, Dr G., London (7)
Arkwright, Rev H.S. (2)	Bellis, Miss S., Wem (7)	Bowman, Mr J.E., Wrexham (70)
Armitage, Miss E., Ross, Herefordshire (15)	Bennallick, Mr I.J., Bodmin (1)	Bowra, Mr J., Warwick (3)
Armstrong, Mrs J., Clun (2)	Bennett, Mr A., Croydon (60)	Box, Dr J.D., Ironbridge (2071)
Armytage, Mr F.R. (1)	Bennett, Mrs R., Maidstone, Kent (102)	Boyd, Mr P., Minsterley (107)
Ash, Mr G.H. (1)	Bennett, Ms C., Norwich (1)	Boyd, Mr W.B., Roxburghshire (1)
Ashley, Mr B., Ellesmere (1)	Benoit, Mr P.M., Barmouth, Gwynedd (56)	Brady, Ms R. (18)
Ashton, Dr P.A., Ormskirk, Lancashire (3)	Benson, F.A.G., Pulverbatch (1)	Braithwaite, Dr R. (2)
Ashwell, Mr, Clungunford (39)	Benson, M.K., Pulverbatch (2)	Braithwaite, Mr M.E., Hawick, Roxburghs. (5)
Ashwell, Mrs A., Clungunford (6,923)	Benson, Miss F.C., Pulverbatch (1)	Brake-Loughhead, Mrs (2)
Asterley, Miss M.H., Llanymynech (27)	Benson, Mr A.G., Pulverbatch (11)	Bramwell, Ms H., Bayston Hill (12)
Asterley, Ms J.N., Llyncllys (5)	Benson, Mr E.B., Pulverbatch (165)	Bratton, Dr J.H., Bangor, Gwynedd (2)
Attlee, Miss (2)	Benson, Mr R.D., Pulverbatch (2,038)	Breakwell, Mr A. (1)
Atwood, Miss M.M. (1)	Benson, Mrs E.M., Pulverbatch (7)	Brenan, Prof J.P.M., Kew (2)
Auden, Miss H.M., Church Stretton (225)	Benthall, Sir P., Benthall Hall (45)	Brewer, Mr S. (4)
Auden, Mrs, Ford (1)	Benthall, Mr G., London (4)	Brewis, Lady A B M (1)
Auden, Prof H.W., and Canada (9)	Bentinck, Lady C., Brogyntyn (1)	Bridges, Ms B., Wolverhampton (1)
Audley, Mr G.A., Wilnecote (69)	Bentley, Mr F., Shrewsbury (29)	Briggs, Mr D. (2)
Audus, F.M. (1)	Bentley, Mr R.H. (2)	Briggs, Mr D., All Stretton (2)
Austin, R. (1)	Berkeley, Rev M.J. (1)	Briggs, Mr J.D., Gloucester (6)
Averis, Mr B., Haddington, East Lothian (43)	Betts, Mr S. (5)	Bristow, Mr L., Essex (1)
Ayliffe, Mr S.J., Shrewsbury (1,630)	Bevan, Mr J., Cambridge (47)	Brocas, Mr F.Y. (1)
Babington, Prof C.C., Cambridge (47)	Bichens, W.G. (1)	Brooke, Rev J. (1)
Babington, Rev J., Ludlow (91)	Bickham, Mr S.H., Ledbury (11)	Brookes, Dr W.P., Much Wenlock (310)
Bache, Ms G., Kidderminster (48)	Bidwell, Dr H., Albrighton & Wellington (86)	Brooks, Ms V., Stone, Staffordshire (227)
Baden Powell, Rev G. (2)	Bierley, Ms S. (2)	Broughton, Mr D.A., Peterborough (49)
Badlan, Mrs M., Ludlow (1)	Bigley, P. (1)	Brown, Dr A., Middlesbrough (31)
Bage, Miss, Bangor (1)	Bigwood, Miss M.H., Herefordshire (120)	Brown, Miss, Bridgnorth (90)
Bagnall, Mr J.E., Birmingham (9)	Bines, Mr T. (1)	Brown, Mr P., West Felton (55)
Bailey, Dr J.P., University of Leicester (3)	Bingham, Mr J., Kidderminster (10,568)	Brown, Ms J., Ackleton (5,068)
Bailey, Mr A., Shrewsbury (48)	Bingham, Mrs D., Kidderminster (29)	Brown, Rev L., Bishops Castle (39)
Bailey, Mr C., Manchester (9)	Bingham, Ms J., Telford (1)	Browning, Mr F.R., Kent (1)
Bailey, Ms J.A., Gloucester (1)	Binstead, Rev C.H. (8)	Bryant, Mrs J.A. (11)
Bainger, Mr C. (1)	Birch, Mr E., Shrewsbury (106)	Bryant, Mrs M., Bilston, West Midlands (508)
Baker, Mr E.G., British Museum (2)	Bird, K.M. (1)	Buckingham, Mr D.L., Leaton Knolls (164)
Baker, Mr J.G., Kew (4)	Bird, Mr A.J. (9)	Bucknall, Mr C., Clifton, Bristol (1)
Baker, Ms J.M., Shrewsbury (66)	Bird, Mrs (9)	Bull, K.E. (3)
Baker, Rt Hon H T, Winchester, Hants. (1)	Biron, Ms E., Somerset (319)	Bullen, Mrs J., Wem (1)
Bakere, Mr A., Exeter, Devon (1)	Bishton, Mr G., Ironbridge (1)	Bullock, Mr T.L., Wiltshire (2)
Balfour-Browne, Mrs F.L. (2)	Black, Ms A. (3)	Burd, Rev J. (1)

## Recorders and determiners

- Burges, Dr R.C.L., Birmingham (24)  
 Burges, Rev W.T., Shrewsbury (2)  
 Burke, Mrs H.M., Welshpool (28)  
 Burkill, H.J. (1)  
 Burnett, Mrs (1)  
 Burnett, Prof Sir J H, Oxford (1)  
 Burton, Miss E. (2)  
 Burton, Mr R.F.L., Longner Hall (9)  
 Burton, Mr R.M., Dartford, Kent (3)  
 Burton, Mrs S., Nantwich, Cheshire (258)  
 Busby, Mr A.R., Coventry (2)  
 Butcher, Dr R.W., Burnham-on-Crouch (2)  
 Butler, Canon T, Shrewsbury & Lincoln (257)  
 Butler, J. (1)  
 Butler, Mr S.G., All Stretton (25)  
 Butler, Ms J.D. (6)  
 Butt, Rev T., Trentham, Staffordshire (1)  
 Butt, Rev W., Kempford, Gloucestershire (9)  
 Butterworth, Mr C., Bridgnorth (1)  
 Button, Mr N., Worcestershire (1,439)  
 Byatt, Mrs J.I. (2)  
 Byrne, Mr J., Herefordshire (94)  
 Bythell, Mr W.J.S. (1)  
 Cadbury, Miss D.A., Birmingham (15)  
 Calcott, Mr J.W., Shrewsbury (7)  
 Calcott, Rev, Caynham Court (1)  
 Callaghan, Dr D.A. (2,291)  
 Calvert, Dr (1)  
 Cameron, Prof R.A.D., Birmingham & Sheffield (84)  
 Camus, Miss J.M., Natural History Museum (1)  
 Cariss, Ms H. (51)  
 Carleton, Mr B., Dunstable (877)  
 Carr, Mr J.W. (13)  
 Carrick, Mrs T., Bromsgrove, Worcs. (1)  
 Carroll, Mrs J., Shrewsbury (151)  
 Carter, Ms A. (803)  
 Cartwright, Miss S. (120)  
 Cartwright, Ms E., Cornwall (199)  
 Carty, Mr P., Church Stretton (14)  
 Carvalho, Dr L., Liverpool (28)  
 Castle, Mrs G.E., Shrewsbury (2,846)  
 Cavalot, Mr K.V., Rugeley, Staffs. (2)  
 Chadburn, Ms H., Worcestershire (413)  
 Chadd, Mrs M.E., Much Wenlock (867)  
 Chaffey, Ms C. (82)  
 Challis, R. (1)  
 Chamberlain, Dr D.F. (4)  
 Chandler, Dr S.E., Imperial Institute, London (7)  
 Chandler, Mr J.H., Stamford (15)  
 Chapman, Dr S.B., Dorset (31)  
 Charter, Rev J.H.E. (1)  
 Chater, Mr A.O., Aberystwyth, Dyfed (262)  
 Cheeseborough, Mr I.P., Wem (4)  
 Chenevix-Trench (1)  
 Chesherland, Mr C. (19)  
 Chicken, Dr E., North Humberside (6)  
 Chignell, Rev W.R. (1)  
 Child, L.E., Loughborough (1)  
 Childe, Rev G., Warwickshire (1)  
 Chitty, Ms L.F., Yockleton Rectory (4)  
 Chorley, Miss M. (1)  
 Clapham, Prof A.R., Sheffield (53)  
 Clark, I. (56)  
 Clark, J. (94)  
 Clark, Mr M.C., Birmingham (989)  
 Clarke, Dr S. (1)  
 Clarke, Mrs J.H., Milnthorpe (799)  
 Clark-Maxwell, Rev. Preb. W.G. (1)  
 Clayfield, Mr J., Hopton Castle (12,891)  
 Clement, Mr E.J., Gosport, Hampshire (13)  
 Clements, Mr D.K., Cardiff (64)  
 Cleminshaw, Mr E., Sherborne (5)  
 Cleugh, Dr M., Drenwydd, Park Farm (1)  
 Cobbold, Mr E.S., Church Stretton (22)  
 Cockerill, D.I., Worcester (69)  
 Cohn, Dr E.V.J., Wolverhampton (565)  
 Cole, Miss M.M., Sleaford, Lincolnshire (83)  
 Cole, Mrs A.T., Rodney Stoke, Somerset (135)  
 Coleman, Mr B., Telford (326)  
 Coleman, Mrs M., Telford (327)  
 Collingwood, R.W. (2)  
 Collins, Ms H. (155)  
 Comber, Mrs, Lower Pulley (2)  
 Combes, Rev E.P. (1)  
 Compson, Mrs W., Bury St Edmunds (1)  
 Compton, Mr E., Maesbury (1)  
 Condry, Mr W.M., Machynlleth, Powys (3)  
 Connah, Mr A., Wollerton (1)  
 Connell, Mrs M.J., Shrewsbury (149)  
 Connelly, Ms J., Telford (331)  
 Conolly, Miss A.P., Oadby, Leicestershire (2)  
 Cook, Dr C.D.K., Liverpool & Switzerland (2)  
 Cook, Dr W.R.I., London & Cardiff (2)  
 Cook, Miss A.G., Pant (3)  
 Cooke, Dr A., Wolverhampton (2)  
 Cooke, Miss V.L. (29)  
 Coombe, Dr D.E., Cambridge (1)  
 Coombs, Mrs N.O., Dolanog, Powys (2)  
 Cooper, M. (5)  
 Cooper, Mr J.E., Kent (1)  
 Cooper, Mr W.N., Romsley (1)  
 Cooper, Mrs F.M.P., Henley Common (24)  
 Cooper, Ms S. (1)  
 Coote, Rev W., London (5)  
 Cope, Dr T.A., Kew (17)  
 Cope, Mr S., Montgomeryshire (67)  
 Copping, Mr A., Diss, Norfolk (5)  
 Corbett, Rev W., Longnor (86)  
 Corfield, Mr R.A., Broseley (42)  
 Corfield, Mrs A.M., Meole Brace (1)  
 Corley, Mr M.F.V., Oxfordshire (180)  
 Cornish, Mr P.H., Shrewsbury (1)  
 Corrie, Mrs M.C. (3)  
 Cotes, Mr (1)  
 Cousins, Mrs M., All Stretton (2,008)  
 Cox, Dr J.H.S., Wareham, Dorset (1,934)  
 Cox, Mr T.A., Ellesmere (2)  
 Crabbe, Mr J.A., Natural History Museum (2)  
 Crawford, Mr A. (1)  
 Crawford, Mr D. (2)  
 Crawford, Mr F.C. (1)  
 Crichton, Ms S., Wheathill (2)  
 Cripwell, Ms F. (4)  
 Critchley, Ms H., Pontesbury (2)  
 Croft, Mr P., Shrewsbury (4)  
 Croft, Mrs J.M., Monks Wood (4)  
 Crompton, Mr J. (51)  
 Crook, Mr C.S., Preston, Lancs. (2)  
 Cross, Mr A.R., Solihull, West Midlands (1)  
 Cross, Mr W.G., Shrewsbury (6)  
 Crossley, Mr J., Orkney (62)  
 Crotch, Rev W.R., Taunton (26)  
 Crouch, Dr H.J., Bristol (4)  
 Crouch, Rev J.F., Herefordshire (1)  
 Crowther, Mr K.A., Bristol (110)  
 Crundwell, A.C. (1)  
 Cuming, Mr S. (16)  
 Cure, Mr R., Coventry (1)  
 Currant, D. (1)  
 Currie, Miss M., Meole Brace (3)  
 Cutler, Mr H., Shrewsbury (499)  
 Dale, Miss K. (36)  
 Dale, Mr J. (1)  
 Dale, Mrs E., Shrewsbury (3)  
 Dallman, Mr A.A., Doncaster (26)  
 Daltry, Mr H.W., Rugby (1)  
 Daltry, Rev J.W., Madeley, Staffordshire (1)  
 Daly, Mrs A.P., Stourbridge (167)  
 Daly, Ms J. (2)  
 Dandy, Mr J.E., Natural History Museum (137)  
 Dandy, N.J. (1)  
 Daniel, Mr T. (1)  
 Daniel, Mrs M.C., Linley (384)  
 Daniels, J.L. (70)  
 Daniels, Mr D., Shrewsbury (189)  
 Daniels, Mrs K.E., Shrewsbury (1)  
 Daniels, Mrs P. (32)  
 Darby, Miss, Coalbrookdale (26)  
 Darkin, Ms L., Worcestershire (71)  
 Dartmouth, Lady (1)  
 Darwell, Mrs A.M., Carlisle, Cumbria (1)  
 Darwin, Dr C.R., Shrewsbury (3)  
 Dave, Mrs R.H. (108)  
 David, Dr R.W., Cambridge (29)  
 Davidson, Mr A.S., Yateley, Hampshire (1)  
 Davidson, Ms H.M., Church Stretton (4,175)  
 Davies, Miss B., Gobowen (118)  
 Davies, Mr G., Manchester (1)  
 Davies, Mr G., Telford (3)  
 Davies, Mr J., Ironbridge (20)  
 Davies, Mr J., Crickheath (1)  
 Davies, Mr J.N., Merthyr Tydfil, Mid-Glamorgan (1)  
 Davies, Mr M., Church Stretton (1)  
 Davies, Mr T. (1)  
 Davies, Mrs C. (7)  
 Davies, Ms S.D., Shrewsbury (92)  
 Davies, Rev J. (1)  
 Davis, Mr T.A.W., St Ishmaels, Pembrokeshire (56)  
 Dawber, Ms M. (1)  
 Dawes, Mr A.P., Trefonen (1,054)  
 Dawes, Mrs R.A., Trefonen (9,361)  
 Dawson, Dr M. (1)  
 Day, Mr J.J., Bromsgrove, Worcs. (439)  
 Day, Mr P., Mold, Clwyd (1)  
 de Vesian, Miss D.E., Cheltenham, Glos. (3)  
 Deacon, Ms J., Tamworth, Staffordshire (323)  
 Deadman, Mrs M., Trefonen (9)  
 Dean, Mr C., Ellesmere (17)  
 Denholm, Dr I.A., Harpenden, Herts. (2)  
 Denyer, Dr J.L., Aberdeen (2)  
 Diack, Mr I., Telford (568)  
 Diamond, Mr T.P., Oswestry (670)  
 Dickenson, Rev S., Blymhill, Staffordshire (2)  
 Dicker, Mr J., Bristol (1)  
 Dickinson, Mr F., Coalbrookdale (294)  
 Dickinson, Mr T., Telford (1)  
 Dicks, H.J. (1)  
 Dickson, Dr J.H., Glasgow (2)  
 Dillenius, Prof J.J., Oxford (15)  
 Dines, Dr T.D., Caernarfon, Gwynedd (1)  
 Dixon, Mr H.N. (9)  
 Dodd, Mr S., Aldershot, Hampshire (182)  
 Dodds, Mr M. (2)  
 Dodwell, Mr H.K., Hanwood (26)  
 Don, Prof D. (3)  
 Donce, Mr A. (3)  
 Dony, Mr J.G., Luton, Bedfordshire (16)  
 Dony, Mrs C.M., Luton, Bedfordshire (71)  
 Douglas, Miss M. (1)  
 Douse, Mr A.F.G. (18)  
 Dovaston, Mr J., West Felton (1)  
 Dovaston, Mr J.F.M., West Felton (74)  
 Dowling, Ms L., Co. Louth, Ireland (1)  
 Downing, Mr J. (3)  
 Drabble, Dr E., Liverpool (1)  
 Draper, Mr B.O., Shrewsbury (99)  
 Druce, Dr G.C., Oxford. (63)  
 Druce, Mr F., London (1)  
 Drury, Mrs M., All Stretton (1)  
 Du Gard, Dr T., Shrewsbury (15)  
 Duckett, Prof J.G., London (314)  
 Duckworth, Dr J.C. (1,448)  
 Dudman, Mr A.A., Cumbria (1)  
 Duff, Mr R. (12)  
 Duffell, Mr M.S., Ford (8,965)  
 Duffell, Mrs J., Ford (1)  
 Duncan, Mr J.B., Bewdley (1,138)  
 Dunn, Ms A., Clee St Margaret (1)  
 Dugate, R.H. (189)  
 Dyer, Miss A., Craven Arms (533)  
 Eades, Dr P., Sheffield (141)  
 Earl, Mr D.P., Southport, Lancs. (716)  
 Earl, Mrs J., Southport, Lancs. (351)  
 Easton, Mr G., Aberystwyth (1)



- Eastwich, R.J. (1)  
 Edees, Mr E.S., Newcastle, Staffs. (74)  
 Edmonds, J.M. (1)  
 Edmondson, Mr T., Chester (96)  
 Edwards, Mr R. (1)  
 Edwards, Mrs J., Market Drayton (4)  
 Edwards, Ms K., British Waterways (2,737)  
 Edwards, Ms S., Ellesmere (2)  
 Elliott, Dr R.J., All Stretton (23)  
 Elliott, Mr B., Knowbury (1)  
 Ellis, Mr G. (1)  
 Ellis, Mr P., Minsterley (2)  
 Ellis, Mrs S.A., Anglesey (1,409)  
 Ellis, Mrs (1)  
 Ellis, Ms N., Scotland (62)  
 Elsmere, Mr E., Astley (210)  
 Elton, Dr C.E., Cambridge (17)  
 Ensum, Ms J., Highley (15)  
 Evans, Dr A. (1)  
 Evans, Dr J., Llanymynech (60)  
 Evans, Mr D.J., Weston-u-Redcastle (1,107)  
 Evans, Mr P., Homer (1)  
 Evans, Mrs D.M., Shrewsbury (99)  
 Evans, Mrs G., Llanfyllin (284)  
 Evans, R. (1)  
 Evans, Rev A., Llanfyllin (3)  
 Eyton, Miss R., Moreton Corbet (2)  
 Eyton, Mr T.C., Wellington (145)  
 Eyton, Rev T.H., Quatford (1)  
 Fallows, Mrs J., Lee Brockhurst (60)  
 Farmer, Mrs E.S. (1)  
 Faulkner, Dr J.S., Loughgall, Armagh (1)  
 Feest, Dr A., Bristol (1,382)  
 Feest, Mrs S.P., Bristol (1,379)  
 Feilden, Rev O.M., Welsh Frankton (255)  
 Felton, Mr J., Leegomery (56)  
 Fenwick, Mr J.D., West Yorkshire (8)  
 Ferguson, Ms A., Staffordshire (3)  
 Ferry, Ms C., Cambridge (10)  
 Fieldsend, J. (1)  
 Finch, Mr S. (1)  
 Fincher, Mr F., Woodcote, Bromsgrove (307)  
 Fisk, Mr R.J., Beccles, Suffolk (7)  
 Fitter, Mr R.S.R., Cambridge (19)  
 FitzGerald, Lady R., Bridgewater (2)  
 Fletcher, M.V. (36)  
 Fletcher, Mrs L., Clungunford (1)  
 Foggett, Mr T.J., Thirsk, Yorkshire (1)  
 Fojt, Dr W.J., Surrey (124)  
 Foley, Dr M.J.Y., Lancaster (2)  
 Ford, Miss R., Whitchurch (72)  
 Forrest, Dr A., Edinburgh (4)  
 Forrest, Mr H.E., Shrewsbury (29)  
 Foster, Miss (1)  
 Foster, W.D. (17)  
 Fowke, Mrs (1)  
 Fowler, Mr B.R., Wolverhampton (4,286)  
 Fowler, Mrs (2)  
 Fox, Dr L.A., Hopesay (550)  
 Foxall, Mr H.D.G. (4)  
 Francis, Ms G., Shrewsbury (186)  
 Frank, Miss E. (1)  
 Franks, Ms A.R., Manchester (627)  
 Fraser, Dr J., Wolverhampton (31)  
 Fraser, Mrs L.H.A., Birmingham (18)  
 Fremlin, Prof (1)  
 French, Dr G., Shrewsbury (1)  
 Fryer, Mrs J., Petersfield, Hants. (5)  
 Fuller, J. (1)  
 Fuller, Miss M.B., Aston Munslow (4,039)  
 Fuller, Mr C., Shrewsbury (134)  
 Fulton, Mr D.C., Highley (1)  
 Furley, Mr G.M., Llangollen (53)  
 Furmage, Mr S., Nescliffe (110)  
 Gagg, Mr A.N., Edgbaston, Birmingham (3)  
 Galliers-Pratt, Mrs A., Cleobury Mortimer (1)  
 Gardner, Miss K.M., Shrewsbury (448)  
 Garner, Dr R., Stoke-on-Trent, Staffordshire (11)  
 Garrington, Ms S. (93)  
 Gateley, Mr P.S., Ormskirk, Lancs. (257)  
 Geen, Ms V., Shrewsbury (1,068)  
 Geikie, Mr S.T., Chesterfield (25)  
 Gelland, Mr (1)  
 Gemmell, B.M., Preston, Lancashire (98)  
 Gemmell, Dr R.P., Preston, Lancashire (98)  
 Gepp, Dr M., Coton Hill (11)  
 Gepp, Mr A., London (5)  
 Gibbs, Mr M., Cornwall (1)  
 Giffard, Mr W.G.L., Wolverhampton (1)  
 Gilbert, Mr R. (18)  
 Gilchrist de Castro, Rev E.H., Halford (2)  
 Gill, Mr A. (6)  
 Gillham, C.H. (2)  
 Gilmour, T.A., Telford (1)  
 Girvan, Ms I., Surrey (3)  
 Glanville, Mr P., Shrewsbury (1)  
 Gleadowe, Mr T.A., Frodesley (1)  
 Glover, Ms J., Shrewsbury (1)  
 Godfrey, Sqn Ldr M.F., Stafford (1,075)  
 Goldsmith, Dr B., London (65)  
 Gomersall, Mrs F.J., Lydbury North (10,792)  
 Goodenough, Rev S., Carlisle (1)  
 Goodway, Dr K.M., Keele (1)  
 Goodwin, Mrs M.E., Richards Castle (5)  
 Gordon, C., Shrewsbury (2)  
 Gordon, Miss V., Liverpool (27)  
 Gore, Mrs R., Craig-Ilwyn (2)  
 Gorman, Ms S., Berkshire (1)  
 Gough, Mr R. (2)  
 Graceson, Miss A., Wolverhampton (1)  
 Graham, Mr R.A.H., Richmond, Surrey (12)  
 Graham, Prof R., Edinburgh (3)  
 Graham, Rev G.G., Bishop Aukland, Durham (135)  
 Gray, Miss J.M., Birmingham (3)  
 Gray, Rev J.D., Nayland, Suffolk (7)  
 GreatRex, Dr P.A., Newcastle, Staffs. (24)  
 Greaves, Mr C., Shrewsbury (14)  
 Green, Dr J.A., St Asaph, Clwyd (10)  
 Green, Dr P.S., Kew (2)  
 Green, Mr H.E., Liverpool (1)  
 Green, Mr I.P., Fochabers, Moray (2,705)  
 Green, Mr P., Swindon, Wiltshire (8)  
 Green, Mr P.R., Liskeard, Cornwall (7,885)  
 Green, Mr R., Ratlinghope (837)  
 Green, Mrs P.G., Ratlinghope (1,534)  
 Greene, Dr S.W., Birmingham (12)  
 Greenhalgh, Mrs J., Ludlow (4)  
 Greenwood, Mr E., Wirral, Merseyside (1)  
 Gregory, Mrs E.S., Weston-super-Mare (2)  
 Gribble, J.G. (1)  
 Griffith, Mr J.E., Bangor (1)  
 Griffith, Mr (1)  
 Griffith, Ms F., Shrewsbury (365)  
 Griffiths, Dr B.M., Durham (1)  
 Griffiths, Dr G.H., Worcester (520)  
 Griffiths, Mr B. (6)  
 Griffiths, Mrs (190)  
 Griffiths, Ms H. (76)  
 Groom, Dr Q.J., Belgium (27)  
 Grove, Mr W.B., Birmingham (1)  
 Groves, Mr H., Clapham (19)  
 Groves, Mr J., Bournemouth (20)  
 Guest, Dr L.B., Shrewsbury (467)  
 Guest, Mr D. (5)  
 Gulliver, Dr R.L., Port Ellen, Islay (10)  
 Gunn, Mr I.D.M., British Waterways (2,737)  
 Hackel, Prof E., Austria (1)  
 Hagger, Mr A. (2)  
 Hagger, Mr J., Nottingham (6)  
 Haig-Brown, Mr I., Berwick Wharf (35)  
 Haigh, Ms J., Hampshire (89)  
 Haines, Miss S. (4)  
 Haines, Mr H.H., Minavon, Powys (2)  
 Hakewell, A.L. (1)  
 Hale, Mr A.D., Aberystwyth, Dyfed (1)  
 Hall, Miss M.C., Cardiganshire (1)  
 Hall, Mr P.C., Erith, Kent (4)  
 Hall, Mr P.M., Fareham, Hampshire (1)  
 Hall, Mrs J.F. (1)  
 Hall, Ms A. (1)  
 Hallam, Ms C., Ironbridge (1)  
 Halliday, Dr G., Carnforth, Lancs. (10)  
 Halls, Mr J.M., Aylesbury, Bucks. (2)  
 Hamilton, Miss E.M., Shrewsbury (4)  
 Hamilton, Mr & Mrs A K, Shawbury (1)  
 Hamilton, Mr H.J., Shrewsbury (12)  
 Hamilton, Mr W.P., Shrewsbury (1,652)  
 Hamilton, Mrs M., Shrewsbury (2)  
 Hamilton, R. (2)  
 Hampson, Mr H., St Martins (1)  
 Hand, Mr H., Alcaston (2,676)  
 Handley, Mr J., Bridgnorth (6,860)  
 Harding, Dr D.J.L., Wolverhampton (1)  
 Harding, Mr M.J. (1)  
 Hardwicke, Mr D. (1)  
 Hardy, Mr E., Liverpool (2)  
 Harford, Mr W.A. (1)  
 Hargreaves, A. (20)  
 Harley, Dr R.M., Kew (46)  
 Harold, Dr B., Rickmansworth, Hertfordshire (4)  
 Harries, Mr H.F., Shrewsbury (1)  
 Harris, Mrs V. (1)  
 Harrison, Mr R., Shrewsbury (9)  
 Harrold, Mr P., Edinburgh (1)  
 Hart, Ms J., Worcestershire (501)  
 Hatcher, Dr P.E., Reading (1)  
 Hatfield, Mr D. (1)  
 Hawkes, Prof J.G., Edgbaston, Birmingham (2)  
 Hawksford, Mr J.E., High Peak, Staffs. (2)  
 Haycox, Mr S.L. (126)  
 Hayes, Rev J. (3)  
 Hayward, Mrs L.H., Ticklerton (9)  
 Hayward, Ms K., Witham, Essex (57)  
 Hazlehurst, Ms A. (111)  
 Headley, Dr A.D., Steeton, W. Yorks. (42)  
 Heagerty, Ms L. (3,237)  
 Heap, Mr J., Shrewsbury (3)  
 Hearle, Mr A., Natural England (763)  
 Hearn, Ms K., National Trust (1)  
 Heath, Mr J.W., Shrewsbury (56)  
 Heath, Ms M.J. (172)  
 Heath, Rev D.M., Moreton-in-Marsh, Glos. (2)  
 Heaven, Mr D.J. (220)  
 Heber, Rev R., Hodnet (1)  
 Hemsley, J.H. (1)  
 Henry, Mr (1)  
 Henslow, Rev J.S., Cambridge (2)  
 Hepworth, Ms J., Shrewsbury (92)  
 Herbert, Mr A.T., Shrewsbury (3)  
 Heron, Miss M., Prees Green (1)  
 Herring, Mr B., Shrewsbury (1,083)  
 Hesketh, Mr R. (116)  
 Heslop-Harrison, Prof J.W., Kew (1)  
 Hewett, Ms J., Preston, Lancashire (98)  
 Heywood, Mrs (3)  
 Heywood-Waddington, Mrs E., Neen Savage (631)  
 Hicken, Dr N.E. (6)  
 Hiern, Mr W.P., Barnstaple, Devon (18)  
 Higgins, Mr R.G., Newport (70)  
 Higgins, R. (2)  
 Hignett, Miss E.M., Oswestry (449)  
 Hignett, Miss J., Oswestry (1)  
 Hignett, Mr J., Oswestry (2)  
 Higson, Mrs P., Oswestry (265)  
 Hill, Dr M.O., Abbots Ripton, Huntingdon (178)  
 Hill, Dr R.S. (1)  
 Hillman, Mr A., Shrewsbury (891)  
 Hind, Rev W.M., Honnington, Suffolk (13)  
 Hinton, Mr G. (10)  
 Hoare, Mr M.G., Little Emsdon (916)  
 Hodges, Ms V., Shrewsbury (245)  
 Hodgetts, Mr N.G., Portree, Skye (949)  
 Hogarth, Mr C., Natural England (68)  
 Holland, Mr T., Wolverhampton (184)

## Recorders and determiners

- Hollier, Mr J.A., Geneva (4)  
Hollis, Sgt (1)  
Holloway, Ms P., Telford (1)  
Holmes, Mr N.T.H., Huntingdon, Cambs. (182)  
Holmes, Ms D.S., Worcester (1)  
Holyoak, Dr D.T., Camborne, Cornwall (11)  
Hooker, Sir J.D., London (1)  
Hooson, Miss J.M., Oswestry (5,933)  
Hopkins, Mr I.J., Staffordshire (1)  
Horrell, Mr E.C., Scarborough (1)  
Horton, Mr T.R., Harley (5)  
Horton-Smith, Dr W. (1)  
Horwood, Mr A.R., Leicester (220)  
Hosie, Dr C., Shrewsbury (2)  
Hotchkiss, Mr A., Meifod, Powys (1)  
Houghton, Rev W., Preston on the Weald Moors (1)  
How, Rev W.W., Shrewsbury & Wakefield (9)  
Howard, Dr C.M., Bath (656)  
Howden, Ms V., Shrewsbury (2)  
Howe, Bishop W (1)  
Howell, Mr E. (1)  
Howell, Ms J. (1)  
Hroudova, Dr, Czech Republic (1)  
Hubbard, Dr C.E., Kew (2)  
Hubble, G. (1)  
Huckbody, Mr A. (306)  
Hudson, Mr M.J., Shrewsbury (1)  
Hudson, Ms R. (7)  
Hughes, Dr H.V., Altrington (782)  
Hughes, Mr D. (1)  
Hughes, Mr H.H., Shrewsbury (4)  
Huish, Ms M. (2)  
Hulme, Mr J.K., Neston, South Wirral (1)  
Hulse, Mr T.A., Ironbridge (7)  
Hunt, Mr P.F., Frome, Somerset (7)  
Hunter, Mr D., Shrewsbury (58)  
Hunter, Mrs O., Bewdley (33)  
Hurdle, C.L. (2)  
Hutchinson, Dr G., Cardiff (2)  
Hutchinson, Mr (1)  
Hutchinson, Rev (1)  
Hutton, Miss P., Beckbury (1)  
Hutton, Mr (1)  
Hutton, Mrs W.E., Beckbury (2,171)  
Hyde, Mr H.A., Cardiff (6)  
Hyslop, Mr J.D.E. (2)  
Ibbott, Mr J., Shrewsbury (482)  
Ilsley, Ms J., Wiltshire (2)  
Ing, Mrs J., Weston Lullingfields (11,159)  
Ingram, Mr P. (1)  
Iremonger, Mr R., Shrewsbury (1,143)  
Irish, A.E. (56)  
Irving, Mr A. (1)  
Ison, Mr J.J., Exeter, Devon (27)  
Jackson, Mr A. (62)  
James, Miss G.M., Chirk (246)  
James, Mr E.J. (1)  
James, Mr J., Sheffield (91)  
James, Mr J.V. (22)  
James, Mr T.J., Hertfordshire (2)  
Jannink, Mr M., Malvern, Worcestershire (32)  
Jaude, Ms A.C.O. (1)  
Jebb, Mr G.R., Birmingham (37)  
Jebb, Mr J.R., Shrewsbury (10)  
Jefferson, Mrs R., Child's Ercall (645)  
Jepson, Dr P., Oxford (4)  
Jermey, Mr A.C., Leominster, Herefordshire (164)  
Jeudwine, Mr J., Shrewsbury (1)  
Jinks, Mr J.C. (115)  
Johnson, Capt G.E., Shrewsbury (185)  
Johnson, Dr T. (2)  
Johnson, Mr A. (2)  
Johnson, Mr C., Shrewsbury (1)  
Johnson, Mr J.B., Shrewsbury (85)  
Johnson, Mrs M., Ludlow (222)  
Johnson, Ms R. (2)  
Jolly, Mr D.I., Manchester (132)  
Jones, Dr E.W., Oxford (5)  
Jones, Dr H.L., London (24)  
Jones, G.H. (2)  
Jones, H.A. (2)  
Jones, J. (1)  
Jones, Miss C. (1)  
Jones, Miss E.F. (54)  
Jones, Miss M.G., Bridgnorth (226)  
Jones, Mr A., Shrewsbury (4)  
Jones, Mr G., Wolverhampton (95)  
Jones, Mr L., Ludlow (2)  
Jones, Mr N.P., Shrewsbury (118)  
Jones, Mr R.N., Yorton Heath (10)  
Jones, Mr W., Oldham (7)  
Jones, Mr W., Ruyton-xi-Towns (1)  
Jones, Mrs V., Wolverhampton (311)  
Jones, Mrs V. (482)  
Jones, Ms A. (148)  
Jones, Ms C., Meifod, Montgomeryshire (3)  
Jones, Ms K. (1)  
Jones, R.J. (1)  
Jones-Parry, C.K. (6)  
Jonsell, Dr B.E., Uppsala, Sweden (2)  
Jordan, Dr R.C.R., Birmingham (4)  
Jordan, Mr G., Bewdley (216)  
Joy, Dr J., Wellington (12)  
Judge, Mr S. (18)  
Kay, Dr Q.O.N., Swansea (1)  
Kay, Mr G.M., Bramhall, Cheshire (378)  
Kellaway, Mr (39)  
Kelly, Mr M. (1)  
Kemp, Mr R.G., Alveley (2)  
Kemsley, Mrs F.K., Doncaster, Yorks. (1)  
Kendrew, Miss J., Keighley (1)  
Kennerley, Mr A., Church Stretton (128)  
Kent, Mr D.H., London (2)  
Kent, R.K. (1)  
Kiernan, Dr J.A., London, Canada (5)  
Kilinc, Ms S., Liverpool (28)  
Kilvert, Miss A. (18)  
Kingham, Dr D.I., Market Harborough (397)  
Kingsbury, Dr P.D., Wentnor (27)  
Kingsbury, Dr S., Wentnor (9,361)  
Kipling, Mr F., Rose Cottage, Hilton (1)  
Kirby, Dr K.J., Peterborough, (82)  
Kirkham, Mrs E. (4)  
Kitchen, Dr M.A.R., Berkeley, Gloucestershire, (242)  
Kitchener, Mr G.D., Sevenoaks, Kent, (41)  
Kitching, Mr L., Bewdley (29)  
Kittermaster, Miss (1)  
Knight, Dr J.T.H., Exeter, (3)  
Knight, Mr D., Oswestry (2)  
Knight, Mr H.H., Cheltenham (3)  
Knights, Mr P., Shrewsbury (1)  
Knowle, Ms B., Telford (8)  
Knowles, Mr R., Hanwood, (335)  
Knowling, Mrs E. (2)  
Kohler, Mr T., Shrewsbury (57)  
La Touche, Rev J.D., Stokesay (5)  
La Touche, Rev W.M.D., Wistanstow (1)  
Lacey, Dr W.S., Bangor (1)  
Laffan, Mr N. (3,237)  
Laffin, Mr T., Leamington (7)  
Lake, Ms J., Wolverhampton, (134)  
Lakes, Mr F. (1)  
Lamb, Mr A.R. (2)  
Lambert, Mr D., Romsey, Hampshire (67)  
Lancaster, Miss F. (93)  
Lane, Mr S. (1)  
Laney, Mr B.J., Long Buckby, Northants. (140)  
Langdon, Miss C., Newport, Gwent (69)  
Langton, Mr J., Brockton, Worthen (1)  
Lansdown, Mr R.V., Stroud, Gloucestershire (1,137)  
Lanyon, Mr J., Hope (3)  
Lapworth, Prof C., Birmingham (1)  
Law, Mr N.J., Derbyshire (113)  
Lawley, Mr M., Ludlow (4,385)  
Lawley, Ms S., Stafford (158)  
Lawson, Mr A.G. (4)  
Lawson, Mr J.B., Gatten (82)  
Le Ray, Ms M., Shrewsbury (5)  
Leach, Mr S.J., Taunton, Somerset (3)  
Leather, Ms S. (1)  
Ledger, Mr C.B. (1)  
Lee, Miss M.J., Shrewsbury (486)  
Lee, Ms P. (38)  
Lees, Miss R.B., Market Drayton (944)  
Lees, Mr E., Forthampton, Tewksbury (98)  
Legard, Lady E. (4)  
Legge, Lady J.M., Staffordshire (3)  
Leighton, Rev W.A., Shrewsbury (2,129)  
Leland, Mr J., London (1)  
Leonard, Mrs M., Hopesay (733)  
Leslie, Dr A.C., Guildford, Surrey (1,865)  
Lett, Rev H.W. (2)  
Lewin, Mr R.A., London and Cambridge (1)  
Lewis, D.H. (1)  
Lewis, Miss M.J., Ludlow (2)  
Lewis, Mr D., Birmingham (232)  
Lewis, Mr S., Shrewsbury (839)  
Lewis, Mrs S., Criftons (7)  
Lewis, R. (1)  
Ley, Rev A., Ross, Herefordshire (263)  
Lhwyd, Mr E., Llanforda (6)  
Liffen, Mr C., London (1)  
Lind, Dr E.M., Ambleside, Westmorland (55)  
Lindley, Prof J., London (9)  
Lingwood, Mr R.M. (1)  
Linton, Rev E.F., Bourne-mouth (81)  
Linton, Rev W.R. (4)  
Lister, Ms J.A., Cirencester, Glos. (50)  
Litewood, Ms P.A. (1)  
Little, Mrs C., Shrewsbury (287)  
Lloyd, Dr G., Leamington, Warwickshire (80)  
Lloyd, J.P., Shrewsbury (1)  
Lloyd, Miss E.R., Gobowen (219)  
Lloyd, Miss G., Leaton Knolls (1)  
Lloyd, Miss V.O., Shrewsbury (4)  
Lloyd, Miss, Shrawardine (129)  
Lloyd, Mr L.C., Shrewsbury (74)  
Lloyd, Mrs P.M. (1)  
Loades, Ms L., Newport (479)  
Lobley, Miss E.M. (3)  
Locksley, Ms A. (12)  
Lockton, Ms A.G., Bridgnorth (1)  
Lockton, Mr A.J., Whitstable, Kent (114,435)  
Lomas, Mr E.J., Shrewsbury (224)  
Lomax, Mr A.E., Liverpool (1)  
Long, Miss C., Aberystwyth (2)  
Long, Mr D.G., Gordon, Berwickshire (8)  
Long, Ms C. (38)  
Longton, Mr R.E., Wyre Forest (6)  
Lousley, Mr J.E., London (10)  
Lowe, Rev H.E., Warwickshire (1)  
Lubbock, L.J. (1)  
Lucas, Mr F. (3,237)  
Lucas, Mr R.S., Bridgnorth (17)  
Luce, Mrs, Onibury (2)  
Luddington, Mr J.E.L. (1)  
Lukey, Mr P., Bamsley, South Yorkshire (2)  
Lumley, Mr P. (2)  
Lutley, T. (1)  
Lutley, W. National Trust (64)  
Macdonald, Ms S. (39)  
Macer, N. (1)  
Macfadyen, Dr W.A., Nature Conservancy Council (73)  
Mackay, C.W. (1)  
Mackenzie, Miss N.M., Meole Brace (186)  
Mackie, Mrs G. (1)  
MacLean, Ms T., Newport (290)  
Macvicar, Dr S.M., Invermoidart (9)  
Mager, Mr R. (58)  
Mahoney, T.P. (22)  
Mallabar, Mr J., London (151)  
Mallows, Mr T., Scotland (14)  
Maloney, Mr M.J., Chirbury (1)  
Mansel, Rev S.P., Church Stretton (8)

- Mantle, Mr R.J., Bridgnorth (4)  
 Markland, Ms M. (609)  
 Marquand, Mr E.D., Guernsey (1)  
 Marriott, Mr M., Broseley (2)  
 Marriott, Mrs F., Broseley (1)  
 Marriott, St J, Woolwich (1)  
 Marsh, Dr S., Cambridge (1)  
 Marsh, Mr H.S. (1)  
 Marshall, Rev E.S., Taunton, Somerset (9)  
 Marston, Mr A., Ludlow (19)  
 Martin, A. (2)  
 Martin, Dr R.R., Cardiff (170)  
 Martin, Mr D., Worcester (3)  
 Martin, Mr J., Bristol (48)  
 Martin, Mr P., Tetbury, Gloucestershire (2)  
 Martin, Mrs P., Llanymynech (297)  
 Maskew, Mr R., Tenbury Wells, Worcs. (10)  
 Mason, Dr J.L., Shrewsbury (67)  
 Mason, Mr D., Broseley (10)  
 Mastrachi, Dr M., Italy (23)  
 Matcham, Mr H.W., Chichester (46)  
 Mathews, Mr W., Birmingham (3)  
 Matthews, Mr E. (1)  
 Matthews, Mrs H., Shrewsbury (43)  
 Maugouber, Ms C. (1)  
 Maund, R. (4)  
 Maw, Mr G., Benthall Hall, Broseley (10)  
 Maxted, Dr N., Birmingham (6)  
 Maycock, Mr R., Milton Keynes (1)  
 Mayo, Miss C., Shrewsbury (3)  
 McCann, Ms A. (136)  
 McCosh, Mr D.J., Holt, Norfolk (84)  
 McCullagh, Mrs F., Wolverhampton (635)  
 McGhie, Miss M., Ashford Carbonel (163)  
 McGowan, Ms S., Liverpool (28)  
 McKay, Ms E.F., Wolverhampton (1)  
 McKean, Mr D.R., Edinburgh (2)  
 McKelvey, Mrs J., Telford (563)  
 McKintosh, Mrs (1)  
 McLamb, Ms S. (3)  
 McLeish, Mr A.P., Newtown, Powys (1)  
 McLoughlin, Mr S., Shrewsbury (3)  
 McNeill, Mr W.I., Cookstown, Co. Tyrone (1)  
 Meade, Mr R., Natural England (50)  
 Meade, Ms R., Meifod, Powys (2)  
 Meikle, Mr R.D., Minehead, Somerset (86)  
 Melbourne, Ms R. (3)  
 Melderis, Dr A., Natural History Museum, (1)  
 Melvill, Dr J.C., Meole Brace (768)  
 Melville, Dr R., Kew (6)  
 Messenger, Mr K.G., Rutland (1)  
 Meyerscough, Dr P.J., Sydney (1)  
 Miles, Mr B.A., Glamorgan & Kent (6)  
 Mileto, Mr R., Shrewsbury (5,717)  
 Millett, Mr P. (48)  
 Milner, Mr B., Skipton, North Yorkshire (2)  
 Milner, Mr R. (3)  
 Milne-Redhead, Mr E., Colchester (182)  
 Milsom, Mr F.E., Leicestershire (2)  
 Mincher, J. (2)  
 Minor, Mrs (1)  
 Mitchell, Mr C. (18)  
 Mitchell, Mrs T.E., Leintwardine (587)  
 Mobarak, Miss J., Whitstable, Kent (7,332)  
 Moodie, Mr S., British Waterways (1)  
 Moody, Miss L.A., Gloucestershire (36)  
 Moore, D.M. (1)  
 Moore, Mr J., Dutlas, Knighton (2)  
 Moore, Mr T., London (6)  
 Morgan, D. (1)  
 Morgan, Mr S., Ironbridge (5)  
 Morgan, Mrs I., Ironbridge (1)  
 Morgan, Ms V. (5)  
 Morris, Dr J., Shrewsbury (498)  
 Morris, Mrs M.L., Shrewsbury (246)  
 Morton, Mr A., Bayston Hill (26)  
 Morton, Prof J.K., Ontario, Canada (4)  
 Mose, Mr A., Ellesmere (7)  
 Moseley, Miss H., Buildwas & Malvern (31)  
 Moss, Dr C.E. (1)  
 Moss, Mr G. (2)  
 Moss, Prof B.R., Liverpool (28)  
 Mountford, Mr E.P. Wem (54)  
 Mountford, Mr J.O., Wallingford, Oxfordshire (282)  
 Mountney, Mrs D.V., Harleston, Norfolk (1)  
 Mrs Hunt, Harlescott (1)  
 Mullin, Mr J.M., London, (1)  
 Mulrooney, Mr K., Presthope (1)  
 Murphy, Miss R.J., Camborne, Cornwall (6)  
 Murray, Dr B.M. (10)  
 Murray, Miss O. (1)  
 Murray, Ms E. (1)  
 Murrell, Miss H. (87)  
 Muse, Mr A., Oswestry (2)  
 Mycock, Mr J. (3)  
 Nees von Esenbeck, Prof T.F.L., Bonn, Germany (6)  
 Nelves, Mr E., Kew (3)  
 Nelson, Mrs S.M., Bishops Castle (63)  
 Nethercott, Mr P.J.M., Bristol (15)  
 Neven, Ms H. (1)  
 Newbery, Ms F., Aberaeron (2)  
 Newbold, Dr C. (668)  
 Newbould, Rev W.W., London (2)  
 Newman, Mr E., London (6)  
 Newton, Dr M.E., Stalybridge, Cheshire (2,838)  
 Newton, Mr A.L., Exmouth, Devon (54)  
 Newton, Ms C. (2)  
 Nicholson, Mr W.E., Lewes, Sussex (2)  
 Nicolet, Ms P. (1)  
 Nisbet, Mr D.J., Church Stretton (4)  
 Nixon, Ms V., Birmingham (157)  
 Norkett, Mr A.H., London (1)  
 Norman, Mr R.M., Nottingham (13)  
 Norman, Mrs E.M. (1)  
 Norman, P. (2)  
 Norrell, Ms D., Snailbeach (335)  
 O'Broin, Mr L. (1)  
 O'Connor, Mr M., Liverpool (4)  
 O'Donnell, Dr S., Albrighton (4,069)  
 O'Donnell, Mrs E., Albrighton (2,119)  
 Oliver, Prof D., London (1)  
 Onslow, Miss M. (3)  
 O'Reilly, Mrs C. (109)  
 Ormond, Miss (1)  
 Oswald, Mr P.H., Cambridge (17)  
 Over, E. (2)  
 Owen, Mr C.M. (244)  
 Owen, Mr J., Acton Piggott (1)  
 Owen, Mr J.H. (28)  
 Packham, Prof J.R., Bridgnorth (3,078)  
 Page, Dr C.N., Truro, Cornwall (1)  
 Pagett, Mr J.A., Telford (1)  
 Painter, Rev W.H., Shrewsbury (2,099)  
 Paish, Mrs D.E.M., Monksfields (9)  
 Palin, Mrs E., Telford (1)  
 Palmer, J., Wrockwardine (1)  
 Palmer, Miss C.E. (4)  
 Palmer, Mr R.C., Bodleian Library, Oxford (12)  
 Pankhurst, Dr R., Edinburgh (1)  
 Pankhurst, Mr T.J., Huntingdon, Cambs. (3)  
 Panter, Rev J.A., St Georges (29)  
 Parker, Mr A.W., Welwyn, Hertfordshire (1)  
 Parker, Mr S., Taunton (30)  
 Parker, Mrs P., Weston Lullingfields (12,684)  
 Parrott, Mr J.R. (26)  
 Parry, Dr G., Shropshire Council (1)  
 Parsons, Dr H.F., Croydon (11)  
 Pashley, Mrs J.S., Craven Arms (2)  
 Paskell, Ms C.G.A., Shrewsbury & Lincoln (626)  
 Paton, Mrs J.A. (18)  
 Patrick, Mr E.W., Ipswich (17)  
 Patrick, Mr K., Reading (28)  
 Paul, Miss A.M., Natural History Museum (1)  
 Paulson, Prof O.V., Copenhagen (1)  
 Payne, J., Tadcaster, North Yorkshire (31)  
 Payne, K., Albrighton (1)  
 Payne, Mr L.G., London (35)  
 Payne, Mr R.M., Kings Lynn, Norfolk (1)  
 Pearce, Mr A., Eaton Constantine (1)  
 Pearce, Mr H., Wrockwardine & Stourbridge (2)  
 Pearman, Mr D.A., Truro, Cornwall (7)  
 Pearman, Mr M., Sheffield (206)  
 Pearsall, Mr W.H., Dalton-in-Furness (2)  
 Pearson, Ms T., Woodbatch (6,500)  
 Pedlow, Mr D., Llynclys (4)  
 Pedlow, Mrs J., Llynclys (384)  
 Pedlow, Ms A., Llynclys (4)  
 Peele, Miss (1)  
 Pemberton, Mr T.W., Welshampton (10)  
 Pendlebury, Major W J, Shrewsbury (1)  
 Pendlebury, Mrs H.F., Kingsland, Shrewsbury (146)  
 Peniston, M.J. (1)  
 Penson, Mr R. (1)  
 Perks, D.A. (2)  
 Perring, Dr F.H., Oundle (3,986)  
 Perring, Mrs M., Oundle (77)  
 Perry, Mr A.R., Glamorgan (251)  
 Perry, Mr K., Wales (13)  
 Perry, Mr W.G., Warwick (20)  
 Peterken, Dr G.F., Lydney, Glos. (7)  
 Peyton, Ms J., Wallingford (182)  
 Phillips, Mr G. (4)  
 Phillips, Mrs E., Telford (84)  
 Phillips, Rev W., Kingsland, Shrewsbury (1,772)  
 Phillips, S.P. (1)  
 Phillips, W.P. (1)  
 Phipps, Dr J.B., London, Ontario (13)  
 Pigott, Dr C.D., Grange-over-Sands (2)  
 Pigott, Mr A.C., Stowmarket (53)  
 Pilsbury, A. (1)  
 Pinder, Rev G., Sedburgh, Yorkshire (1)  
 Pinsent, Mrs S., Soudley (100)  
 Pisolkar, Dr E. (34)  
 Pitt, Miss F., Bridgnorth (34)  
 Plant, Mr W., Staffordshire (1)  
 Poel, Dr L.W., Birmingham (1)  
 Poland, Mr J., Southampton (109)  
 Ponsonby, Ms R. (1)  
 Poole, Mr G.S. (3)  
 Poole, Mr T.F., Ryton (3)  
 Pope, Mr P., Abercraf, Powys (194)  
 Porley, Mr R.D., Newbury, Berkshire (1,948)  
 Port, J. (1)  
 Porter, Mr M.S., Wigton, Cumbria (14)  
 Potter, Mrs B.E.H., Harmer Hill (34)  
 Potts, Mr G., Broseley (649)  
 Potts, Mrs E., Benthall (38)  
 Poulton, Mr M.W. Dudley, West Midlands (17)  
 Powell, Miss (1)  
 Powell, Mr C.B., Prees (1)  
 Powell, Rev E., Munslow (15)  
 Power, Mr J.A., London (1)  
 Poyner, Mr D. (1)  
 Preece, Dr T.F., Llynclys (2,178)  
 Preston, Dr C.D., Cambridge (156)  
 Prestwood, Mr W.V., Cross Houses (1,932)  
 Price, J.W. (7)  
 Price, Mr W.R., London (5)  
 Price, Mrs S.R., Wolverhampton (68)  
 Price-Davies, Col C.S., Marringon Hall (3)  
 Price-Davies, Miss, Marringon Hall (3)  
 Pridcant, Ms S., Shrewsbury (1)  
 Pride, Ms R. (7)  
 Prideaux, Miss S.M., Shrewsbury (7)  
 Primavesi, Rev A.L., Rugby, Warwickshire (157)  
 Primrose, Ms B., Nature Conservancy Council (2)  
 Prince, Ms P. (2)  
 Proctor, Dr M.C.F., Exeter (5)  
 Pryce, Mr R.D., Llanelli, Carmarthenshire (1)  
 Pugh, Miss E.D., Pant (8,070)  
 Pugsley, Mr H.W., Wimbledon, Surrey (38)  
 Pursail, Mrs J., Pontesbury (311)  
 Purton, Dr T., London & Alcester, Warwickshire (38)  
 Quinn, Mr P. (1)



## Recorders and determiners

- Race, Mr M. (1)  
 Rackham, Dr O., Cambridge (1)  
 Radcliffe, Mrs E.D., Hertfordshire (1)  
 Radford, Dr E., High Peak, Staffordshire (13)  
 Raikes, Mrs C., Ludlow (13)  
 Ramsbotham, Shrewsbury (253)  
 Ramsbottom, Mr J., London (53)  
 Rand, Mr M.W., Chandler's Ford (2)  
 Randall, Mr J. (2)  
 Randall, Mr R.D., Bath (19)  
 Randall, Ms N., Telford (74)  
 Ransome, Mr G., Ludlow (1)  
 Rapson, Ms J., Wellington, Telford (1,557)  
 Rea, Mr C., Worcester (1)  
 Reade, Mr P., Stourbridge, West Midlands (6)  
 Rechinger, Prof K.H., Wien, Austria (1)  
 Reed, Ms A., Birmingham (1)  
 Reedy, Ms S., Shropshire County Council (3)  
 Reid, Mr A.W., Pershore, Worcs. (4)  
 Reynolds, Dr C.S., Bomere Heath (4)  
 Reynolds, Mrs S., Cleve St Margaret (1)  
 Rhodes, Rev P.G.M., Evesham (2)  
 Rich, Dr T.C.G., Cardiff (997)  
 Richards, Dr A.J., Newcastle-upon-Tyne (45)  
 Richards, Mr G.P. (40)  
 Richards, Mr M.L.A., Aberdeen (37)  
 Richards, Mr P., Shrewsbury (98)  
 Richards, Mr W.E. (1)  
 Richards, Prof P.W., Cambridge (1)  
 Richardson, Mr M. (1)  
 Richardson, Rev H.S.T., Hopesay (347)  
 Rickard, Mr M.H., Tenbury Wells, Worcs. (1)  
 Rickards (1)  
 Ricketts, Ms J., Gloucestershire (69)  
 Riddelsdell, Rev H.J., Oxford (1)  
 Riding, Ms F. (1)  
 Ridley, H.N. (1)  
 Ridley, Miss E.L., Bridgnorth (1)  
 Rigby, Ms J. (1)  
 Rigby, Ms P. (2)  
 Rigg, Mr J. (2)  
 Roach, Ms S., Shrewsbury (324)  
 Roberts, Miss J.A., Shrewsbury (1,424)  
 Roberts, Mr F.J., Carlisle, Cumbria (1)  
 Roberts, Mr R.H., Bangor, Gwynedd (5)  
 Roberts, Mrs M.E., Oswestry (1,548)  
 Roberts, Ms E. (1,165)  
 Robertson, Dr J.S., Aberdeen (1)  
 Robinson, Dr D.H., Edgmond (10)  
 Robinson, Mr J., Wyre Forest (2)  
 Robinson, Mr N. (1)  
 Robinson, N.A. (2)  
 Robinson, R.M. (1)  
 Robson, Dr N.K.B., Oxted, Surrey (2)  
 Roche-Wharin, Mrs M., Much Wenlock (40)  
 Rodwell, Ms J.K., Shrewsbury (477)  
 Roe, Mr S., Herefordshire (1)  
 Rogers, Mr M., Ruabon (1)  
 Rogers, Rev F.A., Sherborne, Dorset (16)  
 Rogers, Rev W.M., Bournemouth (189)  
 Rogerson, J. (4)  
 Rollason, Mrs P. (1)  
 Rom, Dr E., Gloucester (2)  
 Rooke, Rev F.J. (1)  
 Rooker, Miss L. (1)  
 Room, Mr T. (3)  
 Rooney, Mrs S.J., Bentlawnt (5)  
 Roper, Mrs J.M., Priest Weston (1,903)  
 Rose, Dr F., Liss, Hampshire (508)  
 Rosen, J.A. (1)  
 Ross, R., Natural History Museum (1)  
 Rothero, Mr G.P., Argyll (17)  
 Rowe, Mr R., Priestweston (842)  
 Rowley, Mr R., Ironbridge (1)  
 Roy, V. (20)  
 Royle, Mr H. (1)  
 Rudge, Mr T. (202)  
 Ruffino, Ms L., Conwy (1)  
 Rumsey, Dr F.J., Natural History Museum (323)  
 Russell, Mrs P., Oswestry (1)  
 Rutherford, Miss A., Helensburgh, Argyll & Bute (12)  
 Ruthven-Murray, Rev A.E. (15)  
 Rutter, Miss J.B., Shrewsbury (8)  
 Rutter, Mr E.M., Shrewsbury (1,712)  
 Ryland, Mr J., Stoke on Tern (3)  
 Ryle, Mrs M., Shrewsbury (179)  
 Ryley, M.D., Manchester (3)  
 Ryves, Mr T.B., Kingston Hill, Surrey (1)  
 Salmon, Mr C.E., Surrey (6)  
 Salter, Mr J.W., Gravesend, Kent (1)  
 Salusbury, Rev W., Llansannan, Denbighshire (2)  
 Salwey, Rev T., Oswestry (241)  
 Sanders, Mr A., Winchester, Hampshire (21)  
 Sandford, Rev H., Whitchurch (73)  
 Sankey, Dr E.H.O., Boreatton Park, Baschurch (1)  
 Sankey, Mr J., Much Wenlock (1)  
 Savage, Ms C., Shrewsbury (142)  
 Savidge, Dr J.P., Aberystwyth (2)  
 Saville, Miss K.M., Aston Munslow (3,023)  
 Scott, Mr H. (1)  
 Scott, Rev W.L., Manchester (3)  
 Scruby, Miss M.E., Cirencester, Glos. (2)  
 Seddon, Dr B., University of Wales (12)  
 Sell, Mr P.D., Cambridge (121)  
 Sequeira, Rev E.R., Uffington (83)  
 Serjeantson, Rev R.M., Acton Burnell (476)  
 Shanklin, Dr J., Cambridge (122)  
 Shanklin, Mrs M. (24)  
 Sharp, Mr N., St Asaph, Denbighshire (80)  
 Sharpe, Mr D. (1)  
 Shaw, Dr S.C., Sheffield (44)  
 Shaw, Mr J., Newport (1)  
 Shepherd, Mr H.H., Bucknell (4)  
 Shepherdson, Mrs A., Clunton (1)  
 Sheppard, Dr D.A., Peterborough (3)  
 Sherman, Ms W., Craven Arms (1)  
 Shilland, Mr E., London (21)  
 Shoobred, Dr W.A., Chepstow (7)  
 Shoubridge, Mr R.F., Ludlow (1,039)  
 Showler, Dr A.J., High Wycombe, Bucks. (1)  
 Shufflebotham, Mr W., Wem (1)  
 Silverside, Dr A.J., Paisley, Renfrewshire (18)  
 Silvester, Mr (1)  
 Simpson, Dr D.A., Kew (1)  
 Simpson, Mr D.A., Clungunford (315)  
 Simpson, Mr N.D., Bournemouth (1)  
 Simpson, Mrs P. (1)  
 Singleton, Mrs K. (229)  
 Singleton, Ms A. (25)  
 Sinker, Mr C.A., Montford Bridge (7,829)  
 Skelding, Prof A.D., Birmingham & Jamaica (357)  
 Slack, Mr W.J., Cressage (112)  
 Slade, Ms H. (1)  
 Slater, Dr F.M., Llandrindod Wells, Powys (3)  
 Sleath, Dr J.D., Kingstone, Herefordshire (88)  
 Small, Mr C., Newtown, Powys (529)  
 Small, Mr R. (89)  
 Smallshire, Mr D., Wolverhampton (376)  
 Smart, Dr S., Lancaster (1)  
 Smith, D.G. (199)  
 Smith, Dr A.J.E., Bangor (80)  
 Smith, Dr M.E., Wales (36)  
 Smith, Mr D.C., Aqueduct, Telford (5)  
 Smith, Mr M. (4)  
 Smith, Mr R. (75)  
 Smith, Mr S. (5)  
 Smith, Ms E., Shrewsbury (1)  
 Smith, Ms J. (1)  
 Smith, Sir J.E., Norfolk & London (2)  
 Sole, Mr W., Bath (4)  
 Southam, J.C. (1)  
 Southern, Mr G. (3)  
 Southey, Ms J.M., Environment Agency (67)  
 Spalton, Mr L.M., Budleigh Salterton, Devon (11)  
 Spare, Mr H., Oakly Park (157)  
 Sparkes, Miss, Bridgnorth (9)  
 Sparrow, Mr, Leaton (1)  
 Spence, Mrs S., Hopesay (1,062)  
 Spencer, Dr M.A., London (6)  
 Spencer-Vellacott, Dr P., Flintshire (1)  
 Spurrier, Mr M., Shropshire County Council (110)  
 Squire, Mr P., Chelmsford, Essex (1)  
 Stace, Ms H., Ledbury, Herefordshire (4)  
 Stace, Prof C.A., Leicester (17)  
 Stafford, Mrs S., Leominster, Herefordshire (1,106)  
 Stanley, Mr P.D., Brighthstone, Isle of Wight (1)  
 Stanley, P., Birmingham (6)  
 Stead, Mr M.O., Chester (1)  
 Stearn, Prof W.T., Kew (6)  
 Steel, Ms J., Craven Arms (1)  
 Steer, Mr E., Telford (1)  
 Stephens, Ms A. (2)  
 Stephenson, Mrs D. (10)  
 Stephenson, Mrs E.M., Wigan (5)  
 Stephenson, Rev Dr T. (9)  
 Stewart, Mr N.F., Crediton, Devon (226)  
 Stewart, Mrs O.M., Dumfries (2)  
 Stirling, Mr A.M., Glasgow (51)  
 Stocks, Mr P.M., Shrewsbury (531)  
 Stokes, Dr J., Chesterfield, Derbyshire (1)  
 Stokes, Mr R.M., Shrewsbury (2,144)  
 Stokes, Rev H., Shrewsbury (2)  
 Stone, Miss J., Shrewsbury (3)  
 Stone, Mr G.M. (2,708)  
 Stone, Mr, Craven Arms (1)  
 Stoner, Mr H.E., Shrewsbury (2)  
 Stoves, Mr D., Tugford (79)  
 Stratford, Mrs A., Hengoed (252)  
 Stratton, Mr F., Newport, Isle of Wight (2)  
 Streeter, Ms J., Hampshire (1)  
 Stribley, Mr M.J., Truro, Cornwall (6)  
 Strudwick, Ms F.E. (1)  
 Stubbs, Dr A.E., Peterborough (2)  
 Sturt, Dr N., Arundel, West Sussex (10)  
 Sturt, Mrs M.E., Arundel, West Sussex (10)  
 Summerhayes, Mr V.S., Kew (2)  
 Surry, Miss K.L., Newtown, Powys (37)  
 Surtees, Mrs D. (1)  
 Swain, Mr (13)  
 Swales, Dr S., Shrewsbury (575)  
 Swan, Mr J. (1)  
 Swan, Prof G.A., Morpeth, Northumberland (1)  
 Swindells, Mr R.J., London (127)  
 Swindells, Mrs S., Trefonen (377)  
 Symonds, Mr A.E.J. (1)  
 Symondson, Dr A., Kinnerley (4)  
 Synnott, Mr D.M., Dublin (23)  
 Tait, W. (1)  
 Tandy, Ms C.E. (102)  
 Tanfield, Mr C. (1)  
 Tanner, Mr C.M. (2)  
 Tanner, Mr F., Ellesmere (7)  
 Tanner, Mr I. (3)  
 Tanner, Mrs (25)  
 Tapper, Dr R., Bristol (412)  
 Tarrant, Mrs A.K., Morville (261)  
 Tattersfield, Dr P., High Peak, Derbyshire (61)  
 Taylor, J. (2)  
 Taylor, M., Worcestershire (1)  
 Taylor, Mr M., London (1)  
 Taylor, Mr P., Billingshurst, West Sussex (1)  
 Taylor, Mrs P., Upper Astley (101)  
 Taylor, Sir G., London (129)  
 Teearu, Ms T., Shrewsbury (1,686)  
 Tennant, Rev F.R. (3)  
 Thellung, Prof A., Switzerland (2)  
 Thickpenny, Mrs C.E., Shrewsbury (3)  
 Thomas, B.A. (3)  
 Thomas, Dr R., English Heritage (7)  
 Thomas, Mr G., Ludlow (1)  
 Thompson, Mr H.S., Bristol (5)  
 Thompson, Mr I.S., Meole Brace (2,696)  
 Thompson, Mr J.A., Harmer Hill (5,722)  
 Thompson, Mr W.A., High Peak (2,373)

- Thompson, Mrs J., Meole Brace (1,538)  
 Thompson, Rev J.H., Worcester (17)  
 Thompson, Rev W.E., Kings Lynn (348)  
 Thomson, Mr A., Shrewsbury (65)  
 Thomson, Ms M., Shrewsbury (241)  
 Thorne, Dr A.K., Church Pulverbatch (27,978)  
 Thorne, B.E. (2)  
 Thorne, Dr W.L.J., Church Pulverbatch (140)  
 Thorne, Mr R.G., Church Pulverbatch (950)  
 Thornes, Mrs R., Shrewsbury (96)  
 Thorneycroft, Miss C., Telford (1,405)  
 Thornton, Ms M., Hengoed (187)  
 Timperley, Mr H.W., Madeley (1)  
 Tinston, Mr D.J. (132)  
 Tobin, Mr R.W., Newbold Verdon, Leicestershire (1)  
 Tod, Mr S., Godalming, Surrey (1)  
 Todd, Miss E.S.M., Aldbourne, Wiltshire (1)  
 Townsend, Mr C.C., Twickenham, Middlesex (129)  
 Townsend, Mr F., Shipton-on-Stour, Warwickshire (3)  
 Townsend, Ms E., Oswestry (1)  
 Townsend, Ms S., Shrawardine (95)  
 Traherne, Rev J.M. (3)  
 Trail, Prof J.W.H., Aberdeen (1)  
 Travis, Mr W.G., Liverpool (21)  
 Trist, Mr P.J.O., Cambridge (1)  
 Trow, Prof A.H., Penarth, Glamorgan (13)  
 Trueman, Prof I.C., Wolverhampton (11,026)  
 Trump, Mr D. (1,115)  
 Tucker, Mr J.J., Aston on Clun (231)  
 Tucker, Mrs L., Aston on Clun (2)  
 Tudor, Dr R.A., Shrewsbury and Bootle (1)  
 Tudor, Ms G. (12)  
 Turner, G.W. (1)  
 Turner, J.L. (3)  
 Turner, Mr D., Great Yarmouth, Norfolk (7)  
 Turner, Mr S.R., Shrewsbury (174)  
 Turner, Mrs E.M. (32)  
 Twigg, Miss H.M. (2)  
 Tyler, R. (8)  
 Uff, Dr C., Craven Arms (84)  
 Underhill, Mr A., Tipton, West Midlands (1)  
 Upton, Mrs B. (1)  
 Vachell, Miss E., Cardiff (8)  
 Van de Beek, Dr A., Veenendaal, The Netherlands (3)  
 Vaughan, Mrs I.M. (9)  
 Vaughan, Mrs S. (1)  
 Vergine, Mr G., Priestwston (642)  
 Vickers, Ms H., Shrewsbury (94)  
 Voysey, Mr J.C., Herefordshire (1)  
 Wace, D. (8)  
 Wace, J. (8)  
 Wade, Dr A.E., Cardiff (2)  
 Wade, Prof P.M. (2)  
 Wainwright, Mr R., Oswestry (1)  
 Wainwright, Mrs M., Oswestry (2,755)  
 Waite, Mrs P.H., Knowbury (34)  
 Wake, Mr A. (1)  
 Walcot, Mr J. (1)  
 Walker, Dr K.J., Harrogate, North Yorkshire (1)  
 Walker, Mr C., Conover (6,928)  
 Walker, Mr G., Shrewsbury (53)  
 Walker, Mr H., Shrewsbury (7)  
 Walker, Mrs B., Shrewsbury (6)  
 Walker, Mrs G.J., Conover (183)  
 Walker, Ms N., Solihull, West Midlands (8)  
 Wall, Mr T., Lydbury North (1)  
 Wallace, Dr H., Wales (1)  
 Wallace, Mr M., Shrewsbury (1)  
 Walls, Mr R.M., Bournemouth (4)  
 Walters, Dr S.M., Cambridge (34)  
 Walton, Mr C.L. (6)  
 Wanstall, Mr P.J., Diss, Norfolk (1)  
 Warburg, Dr E.F., Oxford (220)  
 Ward, C.M. (1)  
 Ward, Mr C.W., Lower Kingswood, Surrey (1)  
 Ward, Mr R., All Stretton (1)  
 Ward, Ms D. (38)  
 Waring, Rev R.H., Shrewsbury (14)  
 Warmington, Mr M.A., Devauden (2)  
 Warren, Mr R.G., Stoke on Trent, Staffs (10)  
 Warren, Mrs J.A., All Stretton (10,409)  
 Warren, Sir J.B.L., Tabley Hall, Knutsford (1)  
 Waterfall, Mr C.J., Hull and Chester (1)  
 Waterson, Mr J., Ironbridge (1)  
 Watkin, Mr I., Llanyblodwel (78)  
 Watkins, Mr B.M. (1)  
 Watkins, Mr W.W., Shotton (40)  
 Watkins, Mrs A. (1)  
 Watson, Dr E.V., Reading (6)  
 Watson, Mr H.C., Thames Ditton (1)  
 Watson, Mr W.C.R., Bromley, Kent (5)  
 Watson, Mr W.R.C., St John's, Worcester (239)  
 Watson, Mrs S., Bishops Stortford, Hertfordshire (107)  
 Wattison, Mr J.T. (3)  
 Way, Mr J.M., Monks Wood (225)  
 Weaver, Ms J. (2)  
 Webb, Mr H. (1)  
 Webb, Mr J.A., Swansea (1)  
 Webb, Mrs J., Minehead, Somerset (1)  
 Webb, Ms A., Essex (43)  
 Webster, Dr S.D., Bristol (2)  
 Webster, Mr H., Llanymynech (310)  
 Webster, Ms H., Hereford (86)  
 Webster, Ms M.M., Forbes, Moray (167)  
 Wedgwood, Mrs M.L., Slough (4)  
 Wegmüller, S., Nidau, Switzerland (1)  
 Weiss, Prof F.E., Manchester (1)  
 Welch, Dr D., Banchory, Kincardineshire (3)  
 Welchman, Dr D. (220)  
 Wellings, Mr A., Winchester (1)  
 Wells, Mr D., London (7)  
 Welsh, Mr P., Nature Conservancy Council (455)  
 Welton, Dr A. (6)  
 Wesson, Mr J., Rushbury. (1)  
 Wesson, Mrs J.H. (1)  
 West, Dr C., Aylesford, Kent (48)  
 Westcombe, Mr T., Worcestershire (7)  
 Westcott, Mr F., Birmingham (80)  
 Westwood, Mr B., Worcestershire (162)  
 Weyman, Miss L. (3)  
 Weyman, Mr A.W., Ludlow (381)  
 Wheeler, Dr B., Tavistock, Devon (1)  
 Wheeler, Dr B.D., Sheffield (44)  
 Wheldon, Mr J.A., Liverpool (1)  
 Whild, Dr S.J., Shrewsbury (69,940)  
 Whitbread, Dr A., Sussex (549)  
 Whitbread, Mr S., London (1)  
 White, Dr F.B.W., Perth (1)  
 White, Miss K. (19)  
 White, Mr A.E., Shrewsbury (21)  
 White, Mr F.W. (5)  
 White, Mr J.E., Tetbury, Glos. (4)  
 White, Mr J.W., Bristol (10)  
 White, Mrs M., Bayston Hill (146)  
 Whitehead, Rev E., Eastham, Worcestershire (1)  
 Whitehouse, Dr H.L.K., Cambridge (16)  
 Whitehouse, Mr A., Dudley (1)  
 Whitfield, Mr W. (1)  
 Whittle, Mr P.J., Craven Arms (99)  
 Whitwell, Mr W. (315)  
 Wiggins, W.E., Telford (9)  
 Wigginton, Dr M.J., Peterborough (2,373)  
 Wigley, Mr A. (1)  
 Wilcox, Rev H.J., Cockshutt (6)  
 Wilkinson, Miss A., Shrewsbury (2)  
 Wilkinson, Mr W.H., Sutton Coldfield (7)  
 Wilkinson, Ms I., Derbyshire (1)  
 Wilks, Mr D.T. (2)  
 Williams, Dr J., Scottish Natural Heritage (336)  
 Williams, Mrs E.A., Willenhall (10)  
 Williams, Mrs M. (18)  
 Williams, Rev E., Shrewsbury (1585)  
 Williamson, A. (1)  
 Willis, Miss P., Ludlow (336)  
 Willmot, Dr A., Derby (1)  
 Willmott, Miss J.C., Shrewsbury (1)  
 Wills, R. (1)  
 Wilmott, Mr A.J., London (3)  
 Wilson, Dr T.W., Shrewsbury (83)  
 Wilson, Miss (1)  
 Wilson, Mr A. (2)  
 Wilson, Mr A., Bradford, Yorks (2)  
 Wilson, Mr E.A., Ellesmere (32)  
 Wilson, Mr G. (3)  
 Wilson, Ms G., Pontesbury (4)  
 Winder, Mr J. (15)  
 Winnall, Ms R., Worcestershire (1)  
 Withering, Dr W., Birmingham (15)  
 Wolfe, Mr E.H., Churchstoke, Powys (11)  
 Wolley-Dod, Major A.H., Walton-on-Thames (44)  
 Wolseley, Dr P.A., Taunton, Somerset (113)  
 Wolstenholme, Dr L.J., Toxteth, Liverpool (2)  
 Wood, Mr B.W., Cross Houses (1)  
 Wood, Mr J.J., Kew (1)  
 Wood, Ms D. (713)  
 Wood, Rev W., Ipswich & Leeds (1)  
 Woodcock, Mr E.P., Shrewsbury (5)  
 Woodhead, J.E. (1)  
 Woods, Dr R.G., Llandrindod Wells (5)  
 Woods, Miss A., Aylesbury, Bucks. (88)  
 Woodward, Mr S.F., Groby, Leicestershire (48)  
 Woolley, Ms J., Newcastle-on-Clun (1)  
 Worledge, Ms L. (91)  
 Worrell, Dr J. (2)  
 Wrench, Mr D.H., Shrewsbury (14,086)  
 Wright, Mr C.E., Shrewsbury (1)  
 Wyndowe, Mrs, Pulley Common (1)  
 Wynn, Mrs S.J., Lancashire (4)  
 Wynne, Dr G., Holywell, Flintshire (2)  
 Wynne-Corrie, Mrs, Shrewsbury (1)  
 Wynne-Jones, Mrs J., Ledbury, Herefordshire (160)  
 Wyse-Jackson, Dr P.S., Kew (3)  
 Wysome, Mrs P.J. (84)  
 Yelland, Mr W. (43)  
 Yeo, Dr P.F., Cambridge (11)  
 Yeo, Mr M.J.M. (1)  
 Young, Dr D.P., Sanderstead, Surrey (3)  
 Young, Mr C., Yorkshire (1)  
 Young, Mrs D.M., Clun (59)

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## Shropshire Botanical Society

The Shropshire Botanical Society is a not-for-profit organization that is open to all botanists in the county and elsewhere, whatever their level of botanical skill. We hold field meetings, produce a bi-annual newsletter and hold indoor meetings with speakers. Our main remit is to provide a forum for recording the distribution of vascular plants, bryophytes and stoneworts within the vice-county, to provide botanical recording data for the conservation of plants and their habitats, and to provide training opportunities for botanists who wish to improve their identification or recording skills. All of our members and committee officers are volunteers and we always welcome new botanists.

Many of our members also belong to the Botanical Society of Britain and Ireland, the national organization for all amateur and professional botanists. To find out more, visit [www.bsbi.org.uk](http://www.bsbi.org.uk) – all of our field meetings and newsletters are on the Shropshire page of this site.



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